



Designing Educational Media in Suan Phung Nature Education Park

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Abstract

This project produced tools to increase the educational resources offered to visitors in Suan Phung Nature Education Park in Ratchaburi, Thailand. Interviews, surveys, and extensive archival research provided us with the necessary information on the park, its programs, conservation, and qualities of our target audience. We succeeded in complementing the park's existing educational program by producing a video about the park and conservation, as well as by recommending additional activities, programs, and exhibits for future implementation.

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Table of Contents

| | |
|---|-----|
| Abstract..... | ii |
| Acknowledgements..... | iii |
| Table of Contents..... | iv |
| Executive Summary..... | 1 |
| 1.0 Introduction..... | 4 |
| 2.0 Background..... | 6 |
| 2.1 Protecting the Environment..... | 7 |
| 2.1.1 Environmental History..... | 7 |
| 2.1.2 Conservation..... | 8 |
| 2.1.3 Conservation in Khao Yai National Park..... | 9 |
| 2.1.4 Buddhism and the Environment..... | 9 |
| 2.1.5 Ecotourism..... | 11 |
| 2.2 Suan Phung Nature Education Park..... | 12 |
| 2.2.1 Natural Resources..... | 12 |
| 2.2.2 Current Problems in the Park..... | 14 |
| 2.3 Environmental Education..... | 17 |
| 2.3.1 Environmental Education in Thailand..... | 17 |
| 2.3.2 Environmental Education in Suan Phung..... | 18 |
| 2.4 Educational Media..... | 19 |
| 2.4.1 Interactive Media..... | 20 |
| 2.4.2 Self-Led Educational Media..... | 20 |
| 2.4.3 Video as an Educational Tool..... | 22 |
| 2.5 Conclusion..... | 23 |
| 3.0 Methodology..... | 25 |
| Objective 1: Investigate Natural Resources and Need for Conservation..... | 25 |
| Objective 2: Determine Characteristics of the Target Audience..... | 27 |
| Objective 3: Investigate Depth of Educational Resources..... | 28 |
| Objective 4: Produce the Video..... | 30 |
| 4.0 Findings and Recommendations..... | 32 |
| 4.1 Background Data..... | 32 |
| 4.1.1 Target Audience..... | 32 |
| 4.1.2 Park Resources..... | 33 |
| 4.1.3 Conservation..... | 35 |
| 4.2 Video Synthesis..... | 35 |
| 4.3 Complements to Educational Resources..... | 38 |
| 5.0 Summary..... | 42 |
| References..... | 45 |
| Appendices..... | 51 |
| Appendix I: Interviews..... | 51 |
| Appendix II: Storyboard and Script..... | 65 |
| Appendix III: Focus Group for Video Review..... | 69 |
| Appendix IV: Detailed Recommendations..... | 73 |

Executive Summary

Thailand, like many other countries around the world, experiences tension between the environment and economic expansion. Logging, poaching, and other environmentally-damaging activities cause Thailand to suffer from large-scale floods and forest fires, poor air and water quality, and loss of native plant and animal species. The illegal sale of animal products, for example, has threatened 12% of Thailand's vertebrate species (Doll, 1999). Lack of awareness and environmentally damaging cultural beliefs such as the superstitious use of rare animal parts also contribute to this problem. With increased educational efforts, open minds, and support for conservation, many of these issues could begin to disappear.

HRH Princess Maha Chakri Sirindhorn, on a trip to western Thailand, recognized the need for environmental conservation in that area. This realization led to the creation of Suan Phung Nature Education Park. As a microcosm of its host country, the park faces many of the same problems. Among other things, the park has suffered from logging and water pollution. It also labors under continuous development, tourists littering the nature trails, and from the severe effects of tin mining and raw dumping on water sources. Not all of the members of the park community are aware that these are serious concerns. These problems cannot be solved if those who use the park are unaware they are causing the problems or uninterested in solving them.

The purpose of this project was to produce resources to help the park expand its educational program, with aims to lessen the effects of environmentally damaging activities currently practiced within its boundaries. Although the start of an educational program has just recently been established at the park, park officials readily acknowledge the need for an introductory video. The video would provide an overview of the park and its inherent beauty, allowing for an appropriate transition into the basics of conservation education. Our goal is to develop a video that highlights the park's resources and inspires conservation among the park community. We will also create recommendations for support of the park's existing educational program.

Addressing the needs of the Park Committee, creating an introductory video along with supportive recommendations, required a multi-directional approach. We

first investigated the natural resources of the park to discover what it had to offer, as well as what areas needed attention. Knowledge about our audience was also essential in order to have the largest positive impact on the treatment of the park. Additionally, we explored what educational materials the park already offered, in order to determine the best ways to complement them. Using the information learned from above, we determined that some areas were neglected by tourists more than others, and therefore required greater prominence in the media we created, including the video. Because of the shortness of the film, which was less than eight minutes, it was necessary to be clear and concise in our presentation of each attraction and concept. We created the video so it would not only increase awareness of conservation of the park, but would also provide a description of the available educational resources.

Through our research we determined there were several aspects of the park that should be included in the video. However, in order for the viewers to pay attention to all of the video content, we needed to captivate them. We did this by showing the devastation caused by mistreatment of the environment. Once we had their attention, we were able to discuss the most prominent subject, the park itself. We included the geography, unique culture, and the history of the park, both before and during its creation. The park's history is intertwined with HRH Princess Maha Chakri Sirindhorn, who created the park in 1995. The Thai people, our viewers, have a great respect for the Princess so we made sure to include the history of her involvement to inspire a greater love of the park.

Part of the Princess' goal for the park was to educate about the environment, so we incorporated the features of the educational resources at the park, including programs, the visitors' center, and the nature trails. The trails not only provide an opportunity to learn about the local flora, but also bring the visitor to different attractions of the park. When highlighting these attractions we focused on the waterfalls and hot springs found at the park. The park also attracts many overnight visitors, so we included information about resorts, which would be a point of interest for them.

After generating interest in the park, we wanted to create a concern for protecting its environment. A main purpose of our project was to improve education about conservation, so including it in our video was essential. We decided to include both a method to inspire the need for conservation, and instructions on how the

visitors could contribute themselves. By combining these two topics, we gave the viewers personal motivation and empowerment for helping the environment.

Knowing that the video alone would not be sufficient in educating about the environment and conservation, a series of recommendations was created to lend support. We provided a list of activities for the educational camps, some of which could also be implemented for children who come to the visitors' center. We also made suggestions for exhibits and displays for the museum and recommended that further research be done to create signage for the nature trails and programs to train and support the park staff. These additional resources will increase the effectiveness of both the existing educational program and the concepts in the video. These recommendations were formulated through our interview and research processes, combining research on education, media, Thai culture, and specific environmental education techniques. The suggestions also had to meet certain criteria, such as fitting within park budget constraints and our own time constraints in doing quality research to produce adequately supported recommendations.

Our project provided the park both with physical media to add to their program and with future steps to take. It allowed flexibility for the park in choosing which recommendations to implement, but provided many options for success. By implementing even a few of the outcomes of our project, the park will be utilizing an opportunity to reach a much greater part of the community and improve the environment.

1.0 Introduction

Thailand, like many other countries around the world, experiences tension between the environment and economic expansion. Logging, poaching, and other environmentally-damaging activities cause Thailand to suffer from large-scale floods and forest fires, poor air and water quality, and loss of native plant and animal species. The illegal sale of animal products, for example, has threatened 12% of Thailand's vertebrate species (Doll, 1999). Lack of awareness and environmentally damaging cultural beliefs such as the superstitious use of rare animal parts also contribute to this problem. With increased educational efforts, open minds, and support for conservation, many of these issues could begin to disappear.

HRH Princess Maha Chakri Sirindhorn, on a trip to western Thailand, recognized the need for environmental conservation in that area. This realization led to the creation of Suan Phung Nature Education Park. As a microcosm of its host country, the park faces many of the same problems. Among other things, the park has suffered from logging and water pollution. It also labors under continuous development, tourists littering the nature trails, and from the severe effects of tin mining and raw dumping on water sources. Not all of the members of the park community are aware that these are serious concerns. These problems cannot be solved if those who use the park are unaware they are causing the problems or uninterested in solving them.

To find a solution to this issue, people are working in and with the park to help promote the conservation effort. The Park Committee has compiled information and media relating to the park for the purpose of promoting an appreciation of the park's natural resources. Educational resources have been established to achieve this goal. The park already has a visitors' center, museum, and library for the purpose of educating visitors about the natural resources in the park. There are exhibits about the history of the park as well as the plants and animals that live there. The park staff has also created educational camps for local children. The purpose of these camps is to teach children how to use the environment in a safe way so that they can benefit from it without destroying it. The hope is that by teaching young children about these things, future generations will learn them too.

Despite the Park Committee's efforts there remains insufficient awareness of the park's resources and of conservation practices. Many feel more can be done to

encourage use of the park's education program and prevent misuse of the environment. Although there are educational resources available, visitors rarely benefit from them because they either are not aware of their existence, or visit the park only for recreation. Many tourists simply visit the resorts that have been established near the waterfalls and hot spring, which are the major attractions in the park. Unfortunately, those tourists tend to use the park with little or no concern for the environmental damage they are causing. It is the Park Committee's goal to teach the tourists more about the environment and conservation.

The goal of our project was to further the park's educational efforts by creating a video and recommendations for other methods that promote the park and its conservation. This was accomplished through a series of steps, including an investigation of the park's natural resources; characteristics of the target audience; and the park's educational resources. This combination of criteria informed the video content and fueled the addition of necessary recommendations. As a result, we were able to effectively teach the park community about conservation, which will have a lasting effect on the park's environment.

2.0 Background

The park was created in order to protect the natural environment around Suan Phung, so we needed to learn more about protecting the environment. This meant not only learning about Suan Phung Park itself, but also about conservation techniques and effective educational media types. In order to complement the park's vision, fundamental questions needed to be answered. This chapter introduces those questions, discusses their relevance, and lays the foundation for subsequent chapters.

We first studied the environmental history of the area to know where its problems had come from. We then explored methods of conserving the environment in the future, including ways that another nature park, Khao Yai, has found to be successful. Since 95% of Thais are Buddhist (Ministry of Education Thailand, 2004), we studied the Buddhist view on life and protecting the environment. We also investigated ecotourism as a healthy way of maintaining balance between people and nature.

Research surrounding the park's history, biodiversity, and geography was necessary to provide clarity and accuracy in creating an introductory video. We researched the park attractions to gather an understanding of the aspects people enjoyed and to discover what made it unique. Since the goal of our project went beyond simply highlighting park features, the problems the park is currently facing were explored so they could be addressed in the video and in recommendations to the Park Committee.

In order to produce a means of educating people about the environment, we needed to know the best ways to do it. We researched techniques on environmental education. We also explored what had been done so far for environmental education at Suan Phung, and how it compared with education efforts in other areas. To learn the best ways to present information, we investigated the styles and benefits of both interactive and self-led media types, which provided us with a basis for making recommendations to the park's educational program.

Researching these four main areas provided us with tools to face our problem. In the sections below, we have included the knowledge we gained that helped us achieve our goal. Above all, this section provides a strong base for our strategies and enabled our recommendations to be supported and complete.

2.1 Protecting the Environment

Thailand has been facing many environmental problems due to economic and social stresses. The first step towards protecting the environment is understanding what has happened in the past, so it can be prevented in the future. After prevention comes improvement. Although protecting the environment may seem like a universal idea, it is important to realize that each culture views life differently. Because of the large Buddhist population in Thailand, an understanding of how Buddhists view nature was important in finding a solution to the environmental issues. However, not everyone follows those religious ideals, so in order to bring an economic point of view to nature conservation, we investigated ecotourism as a solution to the problems Thailand has been facing.

2.1.1 Environmental History

Deforestation caused by farming and logging has been a major environmental issue in Thailand since the 1960s. Since farming is their only source of income, and because they cannot find usable land elsewhere, rural farmers have been clearing large areas of trees to make room for farmland. Even though it is obviously damaging to the environment, the farmers must continue to do so because it is their only economic option. Partly because of these farmers, forest cover in Thailand dropped by 42% between 1938 and 1985 (Hirsch, 1996). The Royal Forestry Department made some progress in reversing this problem by creating forest reserves, but over one million families had no choice but to live illegally in the reserves and continue clearing trees to farm the land (Hirsch, 1996).

A major byproduct of Thailand's deforestation is the diminishing land area suitable for wildlife. About 17% of Thailand's land area has now been protected ("Thailand: Threats", 2004), however, these areas continue to face a multitude of threats as a result of poaching and minimal law enforcement. Other sources of endangerment stem from under-funding, development pressure, and forest product extraction. Despite the combined efforts of conservation organizations, there is still degradation of the natural areas ("Analysis of Existing Conservation Tools", 2004). The loss of natural habitats has led to continued exploitation of local species, which jeopardizes their existence. Although not all of the endangered species live in the park, people should learn about the importance of all species and the need for protection everywhere, not just in their own area. The Suan Phung Nature Education

Program is working on increasing awareness of all the issues facing the Thai environment.

2.1.2 Conservation

HRH Princess Maha Chakri Sirindhorn created Suan Phung Park to help address some of the environmental problems facing Thailand, but other organizations both in the Thai government and in the private sector have stepped in as well. They have begun to recognize the problems facing the environment, which has encouraged them to take action towards these problems. Protective legislation has been passed, and several conservation organizations have been formed.

These steps have made some progress in increasing awareness of Thailand's environmental. In 1992, the National and Environmental Quality Protection and Enhancement Act was passed (Hirsch, 1996). This act was considered to be the beginning of environmental awareness in Thailand ("Thailand: Environmental Issues", 2003). Also in 1992, the United Nations Conference on Environment and Development was held. A major result of this conference was Agenda 21, a plan for global environmental improvement on both a national and local level ("Agenda 21", 1992). The purpose of this plan was to study the ways in which people impact the environment so that problem areas could be addressed. Many countries, including Thailand, began submitting reports to the Committee for Sustainable Development in order to track progress in implementing Agenda 21.

Organizations such as the Wildlife Conservation Society, the World Conservation Union, and Suan Phung's Park Committee are also trying to promote conservation. In order to provide incentives to protect the environment, the Wildlife Conservation Society provides training and jobs to those who can help protect the land, such as park staff, students, and ex-poachers ("Thailand: WCS Activities", 2004). Incentive-based conservation also has support from the World Conservation Union (IUCN), which believes that over-regulation can cause as many problems as it prevents. In some cases regulation of land use is not economically feasible for the people, leads to the breaking of laws, and takes money away from other worthy programs. IUCN stresses conservation over sustainable use because during hard times, economic pressures have turned sustainable use into devastating use. They still support using the land to some degree, which is an incentive for the people to treat it well, but lean more towards encouragement of conservation. Their key phrase is,

"Conservation through use" (Kenward, 2004). Although the method of conservation is sometimes debated, it is clear that some sort of action needs to be taken.

2.1.3 Conservation in Khao Yai National Park

Khao Yai National Park is Thailand's first and most popular national park. It has been successful both in drawing visitors and in encouraging them to conserve the area. Information was gathered on the conservation techniques that Khao Yai suggests to its visitors to identify the types of methods the park uses, and explore their effectiveness.

Tatsanawalai Utarasakul, an expert on the biodiversity and ecotourism management at Khao Yai, provided information about the types of conservation techniques used in Khao Yai. Khao Yai has signs and a field guide that send direct messages about the importance of conservation. In both the signs and the field guide, there is a large emphasis on precautions and small conservation techniques people can practice (personal communication, January 2005).

Utarasakul was the creator of the only field guide currently available to visitors of Khao Yai. The field guide is generally used by visitors as they go on trails. It covers topics such as ecotourism, the park's natural resources, the importance of conservation, and simple suggestions on how visitors can help conserve the park. The suggestions in the field guide read, "If you want to enjoy the park, please carry out your garbage", "Picking flowers/plants from the ground causes erosion during the rainy season." Utarasakul explained that the conservation techniques suggested were purposely made simple and direct so all visitors can understand, remember, and practice the techniques during their current and future visits. After its distribution, the visitors have become more aware of how their actions may affect the preservation of the park. Her field guide is a way the park instills a sense of responsible tourism in the everyday visitor.

2.1.4 Buddhism and the Environment

In determining methods of conservation, it is important to keep in mind that every culture has its own ideas and attitudes about nature. For this reason, environmental education in Thailand should not be approached in completely the same way that it would be in another country. As M.R. Chakrarot Chitrabongs said, much of Thai culture comes from Buddhism (personal communication, February 1,

2005). An understanding of Buddhism leads to an understanding of the Thai people's relation to the environment.

Buddhist belief is largely based on having a clear mind and good mental health (Earth Sangha, 2004). Mental health is so closely tied to physical health that the two should not be distinguished, and therefore together they are referred to as "personal health." According to Buddhist teaching, one who is concerned about personal health should automatically be concerned with the health of the environment he lives in. Personal health is contaminated by unhealthy food, water, air, or any other element that the physical body comes in contact with. As a result, it would make sense for people to automatically want to care for the environment around them. However, according to a study done by the United Nations World Health Organization in 1997, about twenty five percent of sickness and injury in the world is related to environmental problems (Earth Sangha, 2004). Buddhists would say that this is because the body and the environment are so closely related as to be inseparable. Elements of the environment, such as air and water, cycle through our bodies at a constant rate. What is part of the physical body was at one time part of the environment, and will be again at some time in the future. For this reason, personal health and environmental health are essentially the same thing in the Buddhist view.

An important part of conservation is protecting endangered animals, but Buddhism seems to be in contradiction over this issue. One teaching is that humans are superior to all other animals while another says that all beings are equal (Quang, 1996). As Laura Kay Johnson (1992) states, both are true because Buddhists believe in reincarnation. Humans are the highest form of life but if they do not lead good lives, they can be reincarnated into a lower form in the next life. For this reason, all animals should be protected even though they are lower than humans. Although the human form is superior, all souls should be cared for the same way. Animals were human at one time, and may be again, so they should be respected.

Buddhists also respect trees and other plant life, because they too are living beings, and part of the environment that humans are so connected to (Earth Sangha, 2004). Trees provide clean air, shade, and food. However, Johnson (1992) points out that although Thailand is mostly Buddhist, the percentage of forest cover dropped by thirty five percent between 1961 and 1988. This should not have happened, if Thais are Buddhist and Buddhists do not destroy trees. Johnson concludes that

modernization and industrialization have overpowered traditional Buddhist beliefs, causing the environment in Thailand to be damaged.

M.R. Chakrarot Chitrabongs agrees with Johnson. He said that because Thais are by nature non-confrontational, they are somewhat susceptible to outside influence (personal communication, February 1, 2005). When Western ideas came in to replace some of traditional Buddhism, the Thai people accepted the new way of thinking. They were told that Western ways were better, so they adapted to them. This resulted in industrialization and economic growth, which are good for the country, but both of which played a large part in the neglect of the environment in Thailand (Darling, 1998).

2.1.5 Ecotourism

Economic growth is possible without harming the environment; this is the key idea behind ecotourism. A working definition of ecotourism is “purposeful travel to natural areas to understand the culture and natural history of the environment; taking care not to alter the integrity of the ecosystem; producing economic opportunities that make the conservation of natural resources beneficial to local people” (Garen, 2000). Our accomplishments on behalf of Suan Phung Nature Education Park helped fulfill part of the principles of ecotourism: we designed attractive media that promoted responsible use of the park’s resources. While developing that media, we kept in mind the direct and indirect relation it had with the future development of ecotourism in the park. We wanted to make sure the actions the visitors took because of our media were beneficial to both the people of the park and its environment.

Part of the motivation of the educational program in Suan Phung is the further development of a tourism infrastructure for the park without damaging the natural setting. This infrastructure will introduce revenue generated from souvenir sales, tour guide costs, and entrance fees, among other things. It will also put money back into the conservation effort. Although the park could be considered a commercial venture because of this, it is important to keep in mind the most relevant portion of the ecotourism definition: protecting the environment. When incorporating an ecotourism program, an organization must continuously ask itself if the venture meets the intended goal of environmental conservation. If at any point it does not, then the program should be altered or terminated.

According to Garen (2000), a multitude of questions arise when the topic of ecotourism is brought to the forefront. The most prevalent three are:

- 1) What are different perspectives on the project? For example, how is the issue seen on different levels such as locally, nationally, or even internationally?
- 2) What is the larger social, political, and economic context of the region?
- 3) How can a group achieve environmental protection through the proposed project?

Answering these questions will help the nature park, or any ecotourism venture, further develop ecotourism strategies for the future. Guided tours through the park led by local people, the sale of culturally relevant items at a gift shop, or many other activities can help bring revenue to the area. Provided that locals maintain an active involvement with the park, more money will be recycled back into the conservation project.

2.2 Suan Phung Nature Education Park

Even though some progress was being made towards improving the environment, Her Royal Highness Maha Chakri Sirindhorn decided to use ecotourism principles to improve both the welfare of the people and the natural area around Suan Phung. Her interest with Suan Phung began in 1995 when she visited the area and noticed the great diversity of the trees. She decided to establish a guideline to conserve the area by creating a nature park, as well as develop the area into an educational opportunity for school children and other visitors (“HRH Princess Maha Chakri Sirindhorn Visiting the Nature Park Project,” 2004). By the time the park opened in February of 2004, it had a nature study trail, a visitors’ center, and an environmental study camp for primary and secondary school students to learn about conservation.

2.2.1 Natural Resources

The Princess chose to conserve the Suan Phung area because of its biodiversity and beauty; incorporating new media for introducing the park would highlight the beauty of the natural resources of the area. The content must be relevant, interesting, and informative for people to learn, and without a strong foundation of knowledge on the park’s natural features and offerings, media would be

lacking in these three areas. The park's unique characteristics coupled with an understanding of what influences the park today provide excellent subject matter for new media.

The geographic characteristics of the park, from the basics of position to the specifics of the waterfalls and mountains, are beneficial to include in any form of educational media. The park is located in Ratchaburi Province, approximately 230 kilometers southwest of Bangkok near the Thai-Myanmar border. This park is part of four different watershed regions, each one host to a range of animal and plant life. The three key areas in the central watershed area and border are the Khao Jone Waterfall, the Boe Klueng Hot Spring, and the Khao-Ka Jome Mountain. These areas have been identified as effective tourist sites that need to be conserved because they serve a significant purpose in the central area watershed and environment.

The Khao Jone Waterfall is a unique and important feature of the park. The waterfall is a tourist attraction set up by local villagers, but it is also connected with Suan Phung Nature Education Park. A brief walk away from the waterfall is a road access entrance to a parking area. There is a well-made stone trail from the park center to the waterfall that provides a pleasant hike. The stone trail takes visitors through different levels of the waterfall and nearby wilderness, and eventually loops back to the park center.

Another pre-established tourist attraction is the Boe Klueng Hot Spring. The family of a mining engineer that discovered it forty years ago created a resort around the hot spring. It has two pools for bathing using the spring water; one is fed from a stream, and the other is piped to a decorated bathhouse. The environment surrounding the hot spring is similar to the lower levels of the waterfall in both type and density of vegetation.

The Khao-Ka Jome Mountain is another point of interest and is a largely untouched feature on the Thai-Myanmar border. The mountain is approximately ten square kilometers in size, has a three-kilometer hiking trail, a waterfall, many scenic viewpoints, and a wide array of wildlife. Transportation difficulties to and from the mountain have resulted in low visitation. At the time of the park's opening, travel from the mountain to the park center took more than forty minutes each way. Because it is in its early stages of development, the Khao-Ka Jome Mountain could be a useful starting point for the park to educate and incorporate locals in their community's environment (Bresnick, 2004).

2.2.2 Current Problems in the Park

Although there are many opportunities, there are also many problems that stand in the way of the Park Committee fully realizing its education and ecotourism vision. Such problems include lack of cooperation with the local people, land development, and waste management. Tying these all together is the underlying conflict between economic gain and environmental protection. This is the delicate line that the ecotourism concept attempts to walk, and Suan Phung Park is no exception. (The following information was gained from interviews conducted with visitors, villagers, resort owners, and staff within the park. For more information see Appendix I)

The visitors' center at the park is vying for the same visitors that frequent the local resorts. Although some of the visitors take advantage of what the park has to offer, many travel to the area simply for rest and relaxation. This places obstacles in the path of the Park Committee, as many visitors were unaware or did not take advantage of the education resources available at the visitors' center. As one way of counteracting this obstacle, the resort owners, local community leaders, and the Park Committee cooperated to create a network to help promote the park. The owners each donated money to create a brochure which displayed a map of the area including participating establishments, park attractions, and the visitors' center. It was through this network that the proprietors hoped to encourage the tourists to visit and garner an appreciation for the park. This exemplifies the theme of ecotourism in that the developers are becoming environmentally concerned and helping to promote conservation. In the absence of this cooperative effort within the park community, it is likely that problems would continue to escalate.

Despite a good sense of cooperation even amongst the locals, there was some difference of opinion on what was important in the park. Some people believed that the area needed more development, including more roads and new buildings, while others said that the area should be kept as natural as possible. It is still a difficult task for the Park Committee to find a middle ground between the local public and the conservationists. One resort owner maintained that opening additional parts of the border to Burma would be damaging because it would mean destruction of dense forest areas. On the other hand, a former miner and village leader who had been in the area for over thirty years saw things in a different light. He mentioned a water

market on the border of Myanmar, and stated that he saw the benefits of having a second water market nearby. He thought it was preferable to develop the land for more trade with Myanmar. This and similar conflicts continuously pose problems for Suan Phung Park. With the conservationist's view on the situation, new development must be stopped or slowed within the park; however, the welfare of the people must be maintained. This issue draws a fine line for the Park Committee to walk.

The Suan Phung area had been the victim of development from mining and resorts long before it was ever declared to be a park by the Princess. Locals and resort owners alike told stories of their former days of laboring in the tin mines. These mines caused a decrease in water quality. Tin mining requires water at high pressure to help in separating the ore from the dirt and gravel. The run-off caused by this process ultimately led to pollution of park water sources. A housewife who helped collect money to assist the clean-up of the waterfalls also shed light on the subject. She said that in the beginning there were many tigers in the area and the waterfalls were more beautiful. Five mines were then constructed and the tin mines put things in the water. She explained that at the top level, the big pipes which were used to carry water to the mines created lots of changes in the stream. As far as the Park Committee is concerned, development goes against their ecotourism concept. Development in the park has led to poor water quality and loss of native species, but despite these startling facts it continues to be a problem for the area. The park must search for ways to rehabilitate the area's natural resources while enabling the local population to make a living.

Another problem is that there are areas in the park that are difficult to reach without the use of a four-wheel drive enabled vehicle. As a result, these areas are not frequented by the tourists, and their natural beauty cannot be fully appreciated. Without being able to reach an area, visitors find it hard to gain a liking or respect for it. Although there is a minibus available for rental to shuttle people around the park, travel within the park is often troublesome for visitors. Some resorts offer trips into the park using their four-wheel drive vehicles, but these can also cause problems for the environment.

Another major part of the park that is not appreciated because visitors don't go to see it is the visitors' center. Mrs. Lalin Kapgagw, the owner of a small resort, said that she recommended the park's visitors' center to all of her guests who asked about the area attractions. However, many did not take advantage of it because they were

afraid of getting lost. She thought that improvement of roads would lead to better park visitation, but the Park Committee wishes to maintain the natural setting. The park is trying to meet tourists at the halfway point between comfort and conservation.

Another example of the clash between the Park Committee and the visitors manifests itself in waste management. The Park Committee is determined to keep the park as clean as possible, and expects the tourists to adopt a carry in-carry out policy with their garbage. However, tourists want more receptacles to place their trash in. The housewives who collect entrance fees to the waterfall said that they allow people to cook and picnic in the park, but expect them to bring their trash out with them. They said that there are a few signs to inform the visitors of this, but there are not enough, and many still leave their trash. Another source of the waste problem comes with a class gap. Some of the resort owners and locals said that the higher class visitors, those who drive themselves into the park and stay at the better resorts, tend to practice the carry in-carry out method and other forms of conservation. It is the lower class tourists who visit the park on the tour buses that do not have a good understanding of the benefits of conservation, and as a result, treat the environment poorly. Some of the visitors already understand and utilize this concept, but there are far too many who don't. The economic gain for the bus companies to deliver these visitors to and from the park outweighs the consequences of their actions on the environment. The irony of it is that if they continue to travel this path, the park won't be around for visitors to see for much longer.

The newness of the park also contributes to the visitors not knowing about its attractions, since there has not been much time to advertise the visitors' center and what it had to offer. Som Pom, a resort visitor, said he had never been to the visitors' center but that he would try his best to make it on his next visit to the park (personal communication, January 15, 2005). He also stated that he didn't go there because he had come to the park this time only to relax. Other tourists didn't even know that the center existed at all. In order to reach its own goals, the park needs to find a way to promote the educational resources and eventually their end result, environmental conservation.

All of these problems have become issues for the Park Committee. Each faction within the area has different goals and visions for the direction of Suan Phung Park. By carefully addressing each of these problems, the Park Committee should be

able to maintain a strong ecotourism policy while catering to the comfort needs of the tourists and the economic needs of the locals.

2.3 Environmental Education

Long term conservation efforts rely on the education of the people involved. The Suan Phung Nature Education Park is an example of the use of the land while conserving it, and the park encourages multiple avenues of education. The Princess' goals of protecting the environment and improving the welfare of the people can be reached through a number of different education methods. For instance, students at the park could learn about the conservation of land and protection of animals, and learn to appreciate the nature around them. The following sections provide information on environmental education for specific target audiences.

2.3.1 Environmental Education in Thailand

Based on previous knowledge and examples of what has been done, Witoon Permpongsacharoen explained the particularly different model formed for environmental education in Thailand that serves as an outline of suggestions and precautions for educators. This section refers to the ideas explained by Permpongsacharoen in his excerpt titled, “Environmental Education Alternatives from the Thai Environmental Movement” (1993). By being aware of the suggestions and precautions, we were able to apply them to our thinking when determining possible barriers in the collection of data, and long term recommendations for Suan Phung Nature Park.

Assumptions have motivated the specific approach of environmental education within the Thai environmental movement. These assumptions mainly regard the local people in and around protected areas. Local people are assumed to know very little about the environment and that because of this, they contribute to its problems. Contrary to popular belief, the villagers are concerned about the environment. They believe it gives them life, and they fear a decline in its status will affect future generations. Permpongsacharoen recognized tremendous potential for positive outlook among villagers for environmental education. However, this willingness to educate could cause problems. Educators might design educational resources based simply on their own knowledge instead of making sure that these resources are still relevant to the local culture.

To make environmental education effective, an educator should understand the target audience's opinions towards the environment. It is more than finding what villagers already know, it is also seeing the reasons they don't know other aspects of the environment. Permpongsacharoen suggests studying villager's knowledge and its relation to traditions, then analyzing and adapting their beliefs to the specific situation.

An education program can effectively support the idea of environmental conservation only if the educators accept and appropriately handle the setbacks they may encounter with their audience. Permpongsacharoen outlines two major reasons why communities are hesitant to participate in environmental education projects. One reason is that the audience does not feel there is a problem. A second is that those who do see a problem believe it is too large to be handled by their small community. Considering these setbacks and previous suggestions will help educators prepare for a unique situation. Working through the setbacks will lessen the challenge of determining the best methods of educating about the importance of conservation.

2.3.2 Environmental Education in Suan Phung

Viewing multiple videos about the park, created by different sources, has reinforced the theory that Thai students learn much the same way as American students. To back this up further, a discussion with M.R. Chakrabort Chitrabongs, a guest professor at Chulalongkorn University, showed that modern Thai education is beginning to parallel that of western cultures (personal communication, February 1, 2005). The educational resources available in the park, particularly the nature camps, also mirror this pattern.

The environmental camps established by the Park Committee average forty students from the surrounding schools, teach the students in a number of ways, and focus on many different aspects of life in the park. The students participate in observational activities such as visiting park exhibits, bird watching, and hiking the nature trails. The students are also taught through a number of hands-on activities. For instance, the students learn how to test for water quality, which is an important issue in the park. They are taught the characteristics of good water, such as temperature, clarity, and the insects found within it, and then compare it with the results found through their tests. In addition, the concept of reusing products is introduced as they learn how to use the outer shell of banana trees to plant small

nursery trees. These activities are rounded out with other things such as making paper and bark rubbings.

The underlying motive behind all of the prescribed activities is not only for the student to understand the environment, but to learn how to be a part of nature. The Park Committee is trying to teach the children how to protect nature and live in harmony with it. They want to accomplish this through showing the students the beauty of the waterfalls and forests. The guides also describe the relationships between all the items in the ecosystem and how they manage to coexist.

The camps are very similar to those in the United States. Many of the activities in Suan Phung are practiced not only in the national parks in the United States but also in their school systems. The Suan Phung Nature Education Park is beginning its first steps of reaching a broader community with these camps.

2.4 Educational Media

To produce a greater interest in Suan Phung Park and a higher level of learning among its visitors, the incorporation of new exhibits is essential. Despite what it already has to offer, there are many areas where the Park Committee can improve its efforts. Education levels can be increased if appropriate measures are taken. Different media types have been shown to be effective in other parks, and in educating people of different learning styles. The level of education, or knowledge retained, can be related to the medium in which the information is delivered. In adding the described media types the park can better attract and educate its visitors.

For this section, *Research and Education in the National Parks (1932)* by Harold C. Bryant and Wallace W. Atwood, Jr. serves as the main reference for the different forms of educational media in nature parks. Although the difference between their generation and the current one is apparent (1932-2005), it was helpful to notice the types of media used for environmental education that were still in use in the year 2005. At Broad Meadow Brook Wildlife Sanctuary in Worcester, MA we were able to observe some of these different types of media ourselves. Similarities of media types between the book and the wildlife sanctuary will be pointed out throughout this section.

The methods to be discussed can be grouped into a few main ideas that a nature education program should keep in mind for their visitors. One such idea is

encouraging the visitor to study everything firsthand. Second, information should be presented in a simple and understandable manner, so every visitor can learn about the park and its features regardless of their learning ability. Third, highly trained personnel are needed to provide relevant information on the park and about nature, and to stimulate enthusiasm for learning. The following sections are intended to satisfy those three concepts with respect to recommendations for the park's nature education program. In producing our project, we incorporated these ideas and other types of media into the tools we developed for the park's educational program.

2.4.1 Interactive Media

There are several methods by which park visitors can interactively learn about the environment. One is through communication with environmentally knowledgeable people. Another is using the five human senses to interact with nature. Methods in these two categories include guided tours, nature and history trails, and interesting lectures. Further discussion follows about the advantages and disadvantages of each of these methods, particularly when they are put into use at a nature park.

Formal education methods like classrooms and textbooks are seldom used in environmental programs because nature education is not meant to be purely academic. To satisfy the needs of visitors, Bryant and Atwood (1932) believe that an essential part of an education program is the use of passionate nature guides. These educated nature guides take groups to special park areas and explain features in a way that stimulates interest. The guide's purpose is to point things out that most people would overlook, and to introduce the visitors to all the attractions and features of the park. For many visitors, the most meaningful part of their experience would be enjoying a conversation with someone who is able to fully answer all of their questions about the park.

2.4.2 Self-Led Educational Media

Self-led educational media is just as necessary as interactive media. Interactive media are not always the best way to reach learners who prefer seeking information their own way, such as intrapersonal learners ("Learning-Style Inventory", 2004). Some visitors will enjoy educational media that promotes learning about the environment through labels, telescopes, charts, or literature. Adapting this

type of educational media will help Suan Phung reach a broader audience to teach about the importance of the park and conservation in general.

Parks like Yosemite National Park in California take advantage of areas in the park with a higher elevation or a specific feature, and create observation centers. Some observation centers provide fascinating angles for visitors to overlook the ground-level scenery. Other observation centers are established to study a particular topic, like Sentinel Dome in Yosemite which was established for the study of granite. At Sentinel Dome visitors learn about how the granites of Yosemite were created by nature. These centers include learning tools for visitors, such as telescopes, microscopes, and books, as well as naturalists who can answer questions. These centers provide methods of reaching a variety of intelligence types, including kinesthetic, logical, and visual/spatial learners (Haynes, 2004).

Museums have a large amount of topics that they can include. An advantage to having a museum is that, unlike a trail or garden, the contents of a museum can be changed quite easily. Displays can be changed to focus on one type of tree, bird, or flower on a month-to-month basis. The museum can use mediums like pictures, anatomy diagrams, and charts to give the monthly feature more in-depth coverage than it would otherwise have. A museum is an excellent medium for visitors to initiate their own ways of learning about and appreciating the park and its features.

Contributing to the information provided on the posters is a collection of brochures and informative packets. Each little section supports itself by using the posters and the brochures, and additional materials given by the park. Brochures are an appropriate and easily accessible educational medium for visitors. They are usually short and informative, and are also portable, so visitors can browse them while walking through the park. Brochures reach the desired goal by maintaining focus throughout the packet. They should grab a reader's attention by using appropriate headlines, and the text itself should have short sentences for easy reading. Colors should be optimized for the best appearance and aesthetic appeal. It is suggested that brochures be made personal through the use of words such as "you" or, "we." Ultimately, the brochure should promote the project at hand: in this case, the beauty of the Suan Phung Park. This preceding information was adapted from a lesson by the MCG paper company.

Another useful item in education is an informative packet, such as that used by the Blackstone River Valley National Heritage Corridor Commission. These booklets

cover every aspect of the park, from the cultural and historical significance to prospective plans for the future. For someone who has the time to sit down and read such a book, it can be one of the most informative mediums available; however, its length is also its largest downfall. Most visitors are not going to be able to take the time out of their busy schedules to read the book cover to cover. It is important to publish a certain number of these for general use, but it is not the best means to educate the Thai people or western visitors on Suan Phung Nature Park.

If one wants to reach an even wider audience, the best means would be an introductory video. The video could be a collection of motion pictures and still frames that accurately portray the park to potential visitors. In today's world, digital editors make it easy to put together different types of media, and to also add appropriate voiceovers for the narration. This type of media might be best utilized in an educational room at the park's visitors' center. Students or groups of tourists can watch the introductory video prior to touring the park itself, thereby providing them with the necessary background information and conservation ideals the park desires.

2.4.3 Video as an Educational Tool

Of the many types of media available, video is one type that people closely relate to. This is because of the proliferation of movies and television in modern society, as well as the ability to provide both visual and audio stimulation. By using those two senses, video becomes a useful tool for teaching both audio and visual learners. Depending on the content of the video, it also has the ability to reach many other intelligence types, such as interpersonal, logical, and musical learners.

Studies have been conducted to determine the effectiveness of using a video to educate target groups. One case study, which focused on teaching mothers in the Women-Infant-Children program about iron deficiencies in their infants, found that 69% of the mothers demonstrated gains in knowledge after being shown the video, and that 86% of them were able to easily understand the contents of the video (Wakimoto, 2004). Another study, based on drug overdose awareness, found that 94% of the survey respondents thought the video was very useful to show to drug users. They responded with positive feedback on the video's short length and emphasis on two main topics. The "strong soundtrack" of the video received mixed reviews, but 98% of respondents said they found the video useful ("Evaluation of the 'Going Over' Video", 2002).

The values incorporated in a video are very important for catching the attention of the viewer and making the video effective. The facts presented must be relevant to the goal of the video. They need to stimulate thought in the viewer, especially for logical and intrapersonal learners, without losing the interest of other learners due to high complexity. The overdose awareness study found that the ability of the viewer to relate to the subjects of the video was a key element in making viewers pay attention and want to watch it again (“Evaluation of the ‘Going Over’ Video”, 2002).

The iron deficiency study found that the video was able to reach a broad range of ethnicities (Wakimoto, 2004). Videos in different forms have been successfully used to teach a variety of subject groups, such as students and mothers, doctors and drug users, and both men and women. In addition, video can teach a range of topics, from emergency medical procedures to academic subjects like mathematics, science, and history, to religious principles. It is an adaptable media that can be used for almost any situation, which makes it a valuable resource for education.

2.5 Conclusion

The overall problem we faced in doing this project was that there was a low understanding and appreciation of the environment in Thailand, specifically in the Suan Phung area. For decades, farming and logging have destroyed both forests and parts of the animal population that lived there, tin mining has polluted the water sources, and development has affected the area’s aesthetic appeal. Legislation and efforts by conservation organizations have made significant progress in reversing negative effects of deforestation, but more must be done to increase the Thai people’s appreciation for their environment. This is where Suan Phung Nature Education Park came in. After studying Thailand’s environmental situation and the park itself, we had some of the information we needed to lead us towards promoting their educational program. In addition to creating an introductory video, part of our project goal was to recommend the creation of additional media for the park. Our background research allowed us to recommend media that would correspond to different learning styles in order to appeal to a wider audience. The program we recommended served two purposes, the first and more important purpose being to educate visitors about the environment and therefore promote conservation.

Secondly, it produced a positive image of the educational program to attract more visitors, which also served to increase the ecotourism effort. Without the background research on environmental education and protection, the park itself, and media, our final product would not have been nearly as complete or effective as it was.

3.0 Methodology

Suan Phung Nature Education Park was formed because of the recognized value in maintaining the area's natural beauty. Though the area of Suan Phung has faced many environmental and economic issues that continue to threaten its natural resources, the Park Committee's conservational efforts have spread among the community. However, the park still needs assistance in educating the visitors about practicing conservation. It is necessary for the visitors to know that it is in their best interest to understand the importance of and practice conservation. Our goal was to provide a method of educating the people about conservation in a way that they would be able to understand and pay attention to.

To accomplish our goal we first investigated the natural resources of the park and what areas were in the greatest need of conservation. This allowed us to prioritize the park's needs and determine where our focus would be. We next investigated the characteristics of our target audience so we would understand what type of message would best reach them. After knowing our audience, we were able to evaluate what educational resources the park already offered them, and how effectively they were being used. Based on that information, we determined which of the educational tools at the park were reaching the people, and what areas needed to be improved. As one way of addressing those needs, we created a video about the park with information that they would be interested in, and complemented it with simple ways in which the viewers could help conserve the environment around them. By stimulating their interest and supplying techniques that were easy to understand, we were able to design a feasible method of improving the way visitors in the park treat the environment. The following sections highlight each step taken, and will prove useful in understanding how we were able to find a way to positively impact the park community.

Objective 1: Investigate Natural Resources and Need for Conservation

In order to effectively educate people about Suan Phung Nature Park, we performed an inventory of the park's resources. In addition to knowing what the features of the park were and where they were located, we determined whether the resources were being well conserved by the park staff and the visitors. By knowing

which resources were not being conserved, and how they were not being conserved, we could gain an understanding of the environmental topics that people needed to be educated about. Additionally, by knowing what the attractions were, we could better understand what the visitors enjoyed and aim the content of our media towards their interests so they would be more effective.

To fulfill this objective, we employed three methods: archival research, personal observations, and interviews. We began with archival research. Before even seeing the park, we researched the history of the area and learned what we could about the park's natural features. In Bangkok, we had access to the Palace Library in the park's office. The library contained thousands of photographs and about an hour of video footage of the park. We viewed television segments and small video clips that promoted the park and its programs, and acquired summaries of the video content through a translator. The information in the video gave us an understanding of which resources the visitors, park staff, and producers of the video found to be the most important. Additionally, the visit to the library allowed us to collect some of the photographs and footage of the park's resources to use in our own video.

Our second method of learning about the park's resources was interviews with our sponsors, the park staff, residents of the park's villages, and visitors. Each of the four groups we interviewed was able to provide a different perspective on what the resources were and what condition they were in, based on the type of relationship they had with the park. They all answered similar questions about what natural resources were in the park, which of these resources were most popular with tourists, and how the tourists used the park, but the questions allowed enough freedom for the interviewees to provide unique responses. The specific questions used can be found in Appendix I.

As a third method, we used our personal experiences to make further use of the information mined from our interviews and the Palace Library. We visited the park just like any other tourist would, and observed the natural attractions. We took note of the areas that seemed to attract the most visitors and how they were being used, which allowed us to validate our interviews with the park staff and visitors. During walks through the park we were also able to see if areas were highly littered or if they had noticeably poor water quality. Going to the park provided unique insight into the beauty and attraction of the park's resources, in a way that is only possible by physically viewing a marvel of nature in person.

Our visit to the park also allowed us to gather more material for the video. Although the specifics of the video had not yet been worked out, we knew we would need a large amount of raw material to work with. By taking photographs and gathering details about attraction locations and visitor counts, we increased our ability to showcase as many aspects of the park as possible.

Through viewing the park and gaining information from the people most knowledgeable about Suan Phung, we determined the areas that attracted the most visitors, and also the areas with the highest need of conservation attention. Through talking to local people and resort owners, and from our observations when exploring the park, we developed an understanding of the causes of environmental neglect in particular areas. This information helped us to create a solid knowledge base for the direction of the video, and for the media recommendations for the future. The next step was to learn about the people who would be viewing the video so that we could make it as appropriate and effective as possible.

Objective 2: Determine Characteristics of the Target Audience

In order for this video to be direct and fulfill its purpose, we had to tailor its content to our target audience. We found out from the Park Committee that they would like the video to be shown as an introduction to visitors at the park office in Bangkok, and to the patrons of the visitors' center at the park. To continue defining the direction of our video, we decided to learn more about these people since they would be the ultimate judge of its effectiveness. Without knowing who they were and what they were like, it would have been impossible to make a video that matched their needs.

To learn about our target audience, we first asked our sponsors to give us as much information on the visitors as possible, such as what their nationality was, how far away they came from, and how long the average visitor had spent in school. Our sponsors were able to give us a broad view of the visitors because they had observed them over a long period of time. The information from our sponsors gave us a better idea of what to research about the visitors.

By learning about the nationality of the visitors, we were able to make cultural decisions about the video. Since the video was to be shown in Thailand and was about part of their country, we also needed to understand their culture. By

researching Buddhist beliefs about nature, we were able to understand what sort of relationship Thai faith had with the environment, and keep an understanding of that relationship in the video.

We also learned more about the audience by visiting the park and conversing with the staff, resort owners, and visitors. Speaking with the people in the park was most effective because it allowed us to directly interact with our target audience. We were able to determine their different points of view toward the environment and conservation. In addition, these interactions helped us understand the depth of their knowledge about the environment. If, for example, we asked someone why they visited the hot spring and they responded that it was a nice place to relax rather than saying they were interested in the geothermic activity, we would then get an idea of the depth of knowledge and areas of interest of that particular park visitor. Discussions such as this raised questions regarding the park's educational resources and resulted in producing video content that the target audience was interested in and could understand.

Objective 3: Investigate Depth of Educational Resources

The purpose of this objective was to gain an understanding of the park's educational program. We needed this information both to showcase in the video, and to determine what areas of the existing program could be complemented. By showing the educational resources in the video, more people would be aware of their existence and therefore be able to benefit from them. Also, once we knew what the park was utilizing and how effective it was, we were able to recommend ways that the educational program could be improved.

In order to identify the educational resources at the park, we used three methods: archival research, interviews, and personal observations. Archival research came from media files about the park (brochures, videos, and photographs). Most of our media gathering took place in the Palace Library in Bangkok, with the remainder of the media collected at the park itself. The media taught us about what types of educational resources existed at the park.

While at the library, we conducted interviews with members of the Park Committee. They were able to give us information about the educational offerings at Suan Phung, including the topics covered and how they were incorporated into the

educational program. We also traveled to the park to conduct on-site interviews with the park staff and visitors we met at attractions and resorts. This allowed us to determine what types of educational resources visitors knew existed and their opinions about them.

We explored the park ourselves and observed the resources both at the visitors' center and throughout the rest of the park. We noticed the resources that would satisfy different types of learning styles. We explored the nature trails, keeping an eye out for any educational resources along the way and taking note of the type of information the media covered. Through personal observations we were able to simultaneously identify the resources available and evaluate them as any visitor would.

To complete this objective we compared our research on education, conservation, and established national parks with Suan Phung Park to evaluate the effectiveness of the park's educational resources. This allowed us to better determine methods that could be added to Suan Phung's educational program. We determined what parts of the program needed improvement by comparing the methods we found through our research with the resources that the park was currently offering. For instance, if we found that one national park in Thailand provided visitors with a pamphlet specifically on insects in the area, we evaluated it and determined if Suan Phung Park was in need of and could apply a similar type of medium. We checked for topics that the park had completely neglected to include in their program, as well as for resources that were being overlooked or not understood by visitors due to learning and communication differences.

Since part of the goal of our project was aimed towards promoting conservation, we used additional resources to determine what areas of conservation education needed the most attention at Suan Phung. We consulted an expert on conservation methods to add to our knowledge of what techniques were available, and what techniques were reasonable to expect visitors to do. We also researched education methods specific to conservation so that we would know the best ways to present this information. This allowed us to better understand what conservation tools were missing from the park's educational program, and to make important and effective recommendations that improved the way visitors treated the park. Once we had all of this information about the resources the park offered and how effective they

were, the next step was to produce media that would inform visitors about what was available, and complement the existing educational program.

Objective 4: Produce the Video

After we followed the process of the previous objectives, we determined what issues needed to be addressed in the video in order to inspire appreciation among the park visitors. The video was also geared towards teaching visitors practical conservation methods as well as the benefits of maintaining a healthy environment. We used a method of designing a video regularly used for creating both long and short films, called storyboarding. We began the process of producing the video by using a slide editor, in this case Microsoft PowerPoint, to create slides that outlined the important topics to be included. We discussed topics while keeping in mind what our sponsors wanted in the video. We created a storyboard based on what the audience would find interesting, both visually and in terms of content.

Once the storyboard was completed, we visited the park again to gather more pictures to add to what we had already collected from the Palace Library. We then matched the media to the most relevant topic in the storyboard. After creating the visual outline of the video, we used the information we had gathered on the park's history and resources, as well as conservation techniques, to create a script for the voiceover. We used Windows Movie Maker software, a program which converts slideshows into video files and can add sound, to include the voiceover and put the PowerPoint into video form. Due to the limitations of the software, the use of zoom-and-pan and slide transitions were done with Windows Movie Maker rather than the slide editor. Audio/video editing and final video production was completed using Windows Movie Maker.

To analyze this video we showed it to a sample group of the target audience and our sponsors. We used this technique on the members of our target audience because they are the people who need to be attracted to and taught by it. After they viewed the video, we asked them to evaluate it and give feedback about it through a discussion. The discussion allowed us to determine what the audience thought of the content and get their opinions about specific technical aspects of the video. Examples of the qualitative questions we asked them were, "What are the benefits of protecting the environment?" and, "What was your least favorite part?" and, "What parts of the

video were confusing?” Examples of the technical questions we asked were, “Did you have difficulty understanding the narrator?” and, “What images would you like to see more of?” and, “Was the sequence of the video understandable?” Appendix III has more details about the questions for the video focus group. We then used their feedback to make all possible improvements. We decided which improvements were feasible based on time constraints and relevance to the goal of the video. This analysis was necessary because we wanted to make sure the final version of the video was as interesting and understandable as it could be for the target audience.

4.0 Findings and Recommendations

This project provided tools for the park to educate its visitors about the park and conservation. The tools developed incorporated the results from academic research, interviews, surveys, and observations of the park. In order for the tools to be most effective, a detailed analysis of all of the gathered information was required, including analyses of the target audience, park attractions, educational resources, and how all of these subjects fit together. The following section explains the conclusions of our research, the subject matter that was included in the video and the reasons it was included, as well as the recommendations that were formed to address needs of the educational program.

4.1 Background Data

To create a clear and informative video, as well as useful recommendations, we compiled the data we gathered into three sections: target audience, park resources, and conservation. Each section highlights the information we found to be most relevant to our goal, and blends together to motivate our video and recommendations.

4.1.1 Target Audience

The Park Committee informed us that most visitors to Suan Phung Park are Thai; as a result, we researched Thai culture and demographics. We found that three important aspects are Buddhism, love for the monarchy, and education level. These things were important to consider for making the video appropriate and effective for our target audience.

The practice of Buddhism is an important part of culture in Thailand. The National Report released by Thailand's Ministry of Education (2004) states that 95% of the population practices the Buddhist religion. Research on Buddhist concepts revealed that those who practice Buddhism believe that all life has value, and therefore will not harm any living creatures, including trees and animals. However, both our research and personal observations of the park seemed to waver a bit from this. We were informed by our sponsors and liaisons that Thailand's environment is generally not protected by the people, and the park itself has problems with deforestation and pollution. Economic growth in modern Thailand has overpowered Buddhism, and the need for income does not afford many citizens the luxury of protecting the environment.

Another important aspect of Thai culture is the people's respect for the royal family. M.R. Chakrarot Chitrabongs stated that in Thailand, monarchs are gods (personal communication, February 1, 2005). Thailand reveres and respects its royal family; as a result they would generally hesitate to question the monarchy's will. We also found that there is a great love HRH Princess Maha Chakri Sirindhorn, not only from all the people in Thailand, but the people in the park. They respect her for establishing the park and helping to conserve their area. They also love her because she is a member of the royal family, and because she works on behalf of the people of Thailand, trying to make their lives better. It was her vision that established Suan Phung as a nature park, so that community especially respects her. Because of their great love and respect for her, the Suan Phung community held a celebration of her birthday at her park, complete with demonstrations by local children (personal communication, Khun Sompop, January 27, 2005).

Also, research showed that the majority of Thai people are likely to have the equivalent of a sixth grade education and have little interest in reading. According to Thailand's Ministry of Education (2004), the coverage of lower secondary education in 1990 was only 39.6%. That statistic increased an incredible amount, increasing to 72.6% by 1999. However, that means in the years prior to 1990, the years between, and even still today, there is a large population of people with only a minimal education level. Although this seems like a small percentage overall, considering Thailand's population of 64.2 million, that leaves approximately 15.9 million citizens with less than a middle school education. Because of this, things like museum exhibits that require a lot of reading do not always appeal to the average park visitor.

4.1.2 Park Resources

In order to determine the best content for our video and recommendations, we synthesized our data into sections on the park's cultural, physical, and educational resources. By characterizing the data in this way, we were better able to present the information we learned to our target audience, so they could also learn about the park. We concluded that Suan Phung's main attractions are the Khao Jone Waterfall, the Boe Klueng hot spring, the nature trail, and the resorts; additional resources include a visitors' center and environmental camps, as well as unique culture and history.

Through an interview with a former tin mine owner, we learned that a major part of the park's history was connected to the tin mining industry. In a discussion with several representatives of the park community, we learned that the first

foreigners in the Suan Phung area were Dutch settlers, and the first tin miners were members of the Karen hill tribe. While most of the tin mines are now closed, there are still some areas that produce tin ore. The park's culture today is still very intertwined with mining, since it is a large part of the past and a persisting economic influence of the present.

Currently the two main natural attractions in Suan Phung are the Khao Jone Waterfall and the Boe Klueng Hot Spring, and descriptions of both of these attractions can be found in Chapter 2. The majority of people we observed at the park were found at these two attractions. A tourist named Tanit, who was on vacation with his family, stated that he visited the waterfalls because "it's quiet and there are not many people" (personal communication, January 16, 2005). Mr. Torsa, who owns the resort containing the hot spring, said that on a good weekday his visitors number from fifty to one hundred and on a good weekend there may be about a thousand (personal communication, January 16, 2005). It was clear that these two natural resources are the most popular in Suan Phung.

In addition to the natural attractions in Suan Phung, resorts provide another example of what draws visitors to the area. There are many of them located throughout Suan Phung, including one road which was estimated to have twenty or more resorts. The main lure of the resorts is that they provide a quiet getaway from the noise and pollution of cities in Thailand. We heard this from several visitors, including Sompom, a Bangkok resident and guest at one of the resorts, who claimed he visited because "it is nice and cool...there is no pollution" (personal communication, January 15, 2005).

Additionally, we found that the park has a nature trail that is not frequently used. This information came from the park staff, and was confirmed by our own observations. Visitors at the waterfall said that they noticed the trail but never used it because they did not know where it led and were afraid of getting lost. Mrs. Lalin Kapgagw, the owner of a small resort, reinforced this by stating that she recommends that her visitors go to the trails but they usually don't out of fear (personal communication, January 15, 2005). After walking the trail ourselves, and observing the beautiful waterfall alongside it, we concluded that it was a valuable resource that was being underutilized.

Suan Phung also offers many educational resources for visitors, but research shows that they are very much under-used. There is an established visitors' center

with a museum, library, and outdoor exhibits for the purpose of educating the visitors about Suan Phung. The museum contains displays about animal and plant life in Suan Phung, as well as a rock exhibit, three dimensional maps of the park's watersheds, and an outdoor tin mining exhibit. However, during an interview with Areerat Niyomsup, a member of the Park Committee, we learned that while hundreds of people visit the Suan Phung area, only a small percentage goes to the visitors' center (personal communication, January 11, 2005). This means that most visitors were not benefiting from the educational resources available to them. Another educational service that Suan Phung offers is environmental study camps for local students; more information can be found in Chapter 2.

4.1.3 Conservation

Through talking to the Park Committee we found that even though the park had been established as an area for conservation, there were still many environmental problems. The visitors in the park were still damaging it, more resorts were still being built, and the villagers in the park still destroyed the environment for financial gain. Development of the area, including the new resorts, is a problem for the park because it contradicts the park's ecotourism concept. Khun Suthep, a park staff member, said that some people believe the park needs more development, such as new roads and buildings.

Instead, we talked to conservation groups inside Thailand and an expert on Khao Yai National Park (personal communication, Tatsanawalai Utrasakul, February 7, 2005) to learn about small ways that the average park visitor could protect the environment. These included things like carrying all of their trash out with them instead of throwing it on the trail, walking only on the trail so as not to disrupt the natural habitats in the forest, and not polluting the water sources.

4.2 Video Synthesis

Through analyzing our research, we were able to establish the content for our video. Because of the characteristics of our audience, we concluded that a video that presents images along with information would be more likely to hold attention and get a message across. In order to keep a viewer interested enough to watch an entire video, its contents need to be simple and direct. We determined that the video would start with information that would grab the viewers' attention, so that they will want to

watch the entire video. We would then give an overview of Suan Phung, including its geography, culture, and history to provide a reference for the rest of the video content. In order to further gain attention and to inspire respect for conservation, we informed the viewer of the Princess' involvement in the area, and her work to make Suan Phung into a nature park. Next came the results of the Princess' work: the educational resources. Natural features were also highlighted to show viewers what made the park special, and why it should be protected. The video concluded with techniques visitors can use to conserve the environment while they are in the park, which were kept simple to encourage participation.

A necessary component of the video was a section covering geography, culture, and history. The Park Committee communicated to us that they wanted an informative video that would include those different aspects of the park, not only the environmental resources.

We concluded that including Buddhist concepts in our video would serve as a gentle reminder to visitors that life has value, and the environment should be protected in every situation. Because of the high concentration of Buddhists in Thailand these images would prove more effective in reaching our audience. For instance, showing forest fires or stating facts about the loss of animal habitats would directly appeal to the Buddhist viewers.

In order to geographically familiarize viewers with the park, we included the location of the park and simple maps of the area. Adding the geographical portion of the film helped place the park in context with the rest of the nation. To avoid confusion, we used simple maps of the park in relation to the rest of the country, and another close-up map of the park with an outline of the four different watersheds. We included narration detailing the attractions of each watershed, and pictures of the attractions in the watersheds to show the uniqueness of the whole area.

A part of the park's history and culture lies in the mining industry, as such, it was an essential element of the video's content. The tin mining process requires lots of water at high pressures to separate the ore from the dirt and gravel. The runoff from this process polluted the park's water sources and ruined the rich topsoil, leaving behind nothing but sand. As a result, we showed the ill effects of mining to inform the viewer of the damages caused by the practice. This link of the past to the present was another point of interest that would keep the viewers' attention, so we included pictures of locals gathering ore.

Members of the Park Committee believed that if visitors in the park could see that the Princess had been the one to establish the park, and that she took a personal interest in the environment, then they might care more about the environment too. Having a section in the video about the Princess served two purposes. It provided information about how the park was established, and emphasized the adoration of the Princess in order to encourage the viewers' appreciation of the park.

Our research and observations of the park showed that while Suan Phung has many educational resources, they are not used very much. By showcasing those resources in the video, visitors that were not aware of them would have an opportunity to learn about them. Those who were aware but not interested in seeing the resources before might become more interested and willing to go to the visitors' center after hearing what it has to offer. We used pictures of the museum's exhibits and displays to go along with the narrative. We presented these educational resources as attractive and interesting so viewers would want to explore them.

One purpose of the video was to give an overview of the whole park, so we included Suan Phung's most prominent natural features. Not only did this show what made the park attractive, but it also provided insight into what drew visitors there. As stated above, the park's most popular natural attractions are the waterfalls and hot springs. Highlighting the beauty of these features in the video showed how the average visitor used the park, and what attracted them to the area. Although the nature trail was not a popular attraction, we determined that it could be if more people were aware of its benefits. By including pictures of it in the video, more visitors would have the opportunity to learn of its existence and value. Also, mentioning that waterfalls, visitors' center, and hot springs along the trail would lead visitors to use the trail for all the resources it connects.

Research showed that conservation is an important issue in Suan Phung, and should be addressed in the video. We realized that one video being shown to visitors would not solve all of the environmental problems, but it would provide a starting point for conservation efforts and additional programs that could be implemented in the future.

If we could show people the benefits of conservation, they would become interested enough to make at least a small effort to protect the park environment. We found a way of presenting the importance of conservation that would be interesting and understandable to the average visitor in the park. Through talking to educators

and conservationists, we decided that the best way would be to provide simple examples, with images, of what would happen if visitors continued to abuse the environment. Through communications with Jaron Koppers, a conservationist, we concluded that showing visitors the effects of such things as not staying on the marked trails could produce positive results (personal communication, February 3, 2005). By keeping the idea of conservation on this smaller scale, it was easier for visitors to relate to. Images and facts presented in the video about the benefits of conserving the environment spark interest and motivate the visitor to join the conservation effort.

The final section of the video educates the viewer about ways they can conserve the park. The prior section told the viewers that they should protect the environment, and this section provides ways for them to do this. Once again, we considered what we had learned about the education level of Thai people and their attitudes toward the environment. We were careful not to overwhelm the viewer by presenting large amounts of information and many directions at once, as it would only cause confusion. Because of previous environmental neglect sparked by western influence, we were reluctant to force too many western conservation practices upon them (Chitrabongs, personal communication, February 1, 2005). Instead, we talked to conservation groups inside Thailand and an expert on Khao Yai National Park (personal communication, Tatsanawalai Uтарасakul, February 7, 2005) to learn about small ways that the average park visitor could protect the environment. These included things like carrying all of their trash out with them instead of throwing it on the trail, walking only on the trail so as not to disrupt the natural habitats in the forest, and not polluting the water sources. We also included ways that the park could be enjoyed safely without leaving any damaging effects, such as bird watching and photography.

4.3 Complements to Educational Resources

The purpose of the video was to inform visitors of the park's most important attributes and about conservation, but it is only one medium that the park can use to educate them. To determine what other means the park can implement, we evaluated the park's current educational resources, and determined ways that they can be complemented.

We learned that the park already has environmental camps, which teach local children about the benefits of conservation so that they will pass the information along to their families when they go home. The camps cover topics like forests, geology, and animals. They teach the children how to investigate nature through a scientific process, and about being responsible in their use of natural resources (Suan Phung Brochure). To determine ways that the camps could be improved, we explored other education programs to see what types of activities were used. According to Aissa Arbogast (personal communication, November 12, 2004), a specialist in child education, all different learning styles should be included when teaching children. We chose and modified the activities we found, including those found in an extensive environmental syllabus (Wilderness and Land Ethic Curriculum, 1996), so they would be relevant to Suan Phung, both in topics and according to culture. The activities we chose teach about the nature and engage the students so they become personally aware and interested in the environment. For example, by acting as an animal and exploring its needs, a student realizes that animal needs are similar to their own, and that protecting natural resources is essential if the animal is to survive. Appendix IV describes possible camp activities in more detail.

Several of the activities for the camps could also be set up to run at the visitors' center. The visitors' center currently has a museum with several displays about animals and plants. While these things provide useful information, the format that they are presented in does not seem to interest visitors. Some of the camp activities that could be left in the visitors' center would be more interesting to the visitors, especially children. Such things as papermaking or making plant pots from banana leaves can be done at there as well as in the camps. Since the park is short-staffed already, the visitors' center activities need to be self-run and low-maintenance. A set of simple and understandable instructions should be left for each activity, as well as the materials needed to complete the activity. Several other parks, such as Broad Meadow Brook Wildlife Sanctuary, have sets of animal skulls for visitors to examine. Careful observers can determine the eating habits and habitat of the animal just by interpreting skull features. Explanations of the skulls could be provided as a supplement to the display, as well as suggestions for other activities that the skulls can be used for, such as imagination exercises or making drawings. These activities support many different learning types, including visual/spatial, kinesthetic,

logical/mathematical, as well as several others. A more complete set of self-run activities and the materials needed for each can be found in the Appendix IV.

Static displays are also commonly used at visitors' centers and other areas of parks because they require very little maintenance while still being very informative. Parks such as Khao Yai in Thailand and Badlands National Park in the US have static displays, including signs, posters, and exhibits. These displays provide information on specific topics for people whose interests have been captured by park attractions and other media offered at the park. A poster on the water cycle would explain how the waterfalls seen in the park can run continuously, and at the same time will teach why protection of water sources is necessary (The Wilderness and Land Ethic Curriculum, 1996). The many different kinds of permanent displays can satisfy many different needs. Signs contain smaller amounts of information and are better at catching attention, whereas posters can contain more information even though they take longer to read, and 3-D displays allow for better visualization of a topic. Several other options for displays and brochures Suan Phung can incorporate are found in Appendix IV.

Our recommendations include more than just adding media. During our interviews with park staff, we found that they could benefit from more manpower and education. Adding more staff, in addition to giving seminars for the existing staff on park aspects such as its geology or fauna, as well as public speaking, would benefit visitors. Having knowledgeable people available to answer questions and give tours allows visitors to learn more and feel more connected to the park. Each staff member also has their own area of expertise, and this could be used to provide specialty seminars for visitors.

Seminars could be arranged on a regular basis, and could be combined with other activities to form a weekly or monthly attraction to the visitors' center. Other activities could include workshops on local crafts to include the native villagers, training on the use of field guides and maps so people can make better use of the park, and performances from local culture or camper creations. Regular events help involve the nearby villages, which helps satisfy the park's purpose and build the park community, and it can also help attract visitors if it is advertised. The events could also be chosen to promote conservation, such as teaching people to make banana leaf bags (Khun Foy, personal communication, January 12, 2005). Regular events can cater to a variety of learning styles and hold a multitude of possibilities.

Our research has provided us with many methods of teaching visitors and locals about conserving the environment. Our most important finding was that the park needs to continue to develop its educational program. With the recommendations we have made, or with their own ideas, the potential for having an impact on visitor and villager actions is tremendous. Although the park may choose which ideas to implement based on its budget and local culture, we have provided the initial stepping stones for improvement.

5.0 Summary

Our research methods have provided a detailed and complete set of conclusions to present to the Park Committee. The major findings reached were the characteristics and needs of the target audience, the content for the introductory video, and the types of recommendations that support the educational program. These findings achieved the goal set forth by the team, which was to complement the environmental education at the park, and met the requirements of the Park Committee.

Our research provided us with the content areas, target audiences, and best methods of use for the video. What this research revealed, as explained in chapter four, was that the audience generally comes to the park for recreation and relaxation, has Buddhist beliefs, respects the Princess and her efforts, and low education levels. This required us to tailor the video to meet the needs of the viewer, such as presenting easier concepts and showcasing the park's offerings in an attractive and interesting way. We included attention grabbing facts about the park's environmental history; its culture, geography, and history; the Princess' vision; the park's natural attractions and services; lodging establishments; and methods of conservation. The need for each of these areas was derived through our preliminary research, interviews with members of the park community, and personal experience. We also created a video section that taught the need for conservation, and very simple ways that park visitors can help conserve. Keeping the conservation techniques simple and feasible made it possible for the visitors to actually carry them out. Our research led us to create an appropriate video, fitting all the above criteria.

A second conclusion provided by our research was the types of recommendations needed to support the park's existing educational program. We took into account the avenues previously and currently being explored by the park, and determined which new routes to suggest. We offered ways that the Park Committee could add to their environmental camps, visitor center activities, and static displays. An example of an activity to include in the environmental camp is a scavenger hunt that requires students to have an enthusiastic interaction with the environment. A drawing center in the visitors' center encourages visitors to draw objects related to nature, thus allowing them to use their creativity as well as develop an appreciation for what the objects they are drawing. Signs displaying some fundamental scientific information about such topics as the food chain satisfy the

needs of those that wish to learn more about the science in nature. Each of these is an integral component of the complete educational experience. Investing in these suggestions would benefit the park because research has shown that parks that currently include these activities and media have proven themselves successful in conserving and educating.

The conclusions reached through our research will help the Park Committee spread its message of conservation and promote the local welfare throughout the park, and Thailand as a whole. However, through the completion of our project, we have determined three areas that the Park Committee may want to make further improvements on in order to continue the expansion of their educational program and conservational efforts. We have made recommendations regarding the distribution of the video, signage along the trails, and the staff in the park. The following provides more detail.

In order for the video to make the most impact, we recommend that it be distributed beyond the park's boundaries. Research showed that a video can be used as an effective medium for educating, especially for larger audiences. As a result, we recommend that the park take advantage of this opportunity through cooperation with national tourism agencies. If the park is able to reach a partnership with bus companies that transport visitors to Suan Phung and have them show the video on the buses, hundreds of people would be able to see it before they even reach the park. This would mean that even visitors who don't go to the visitors' center would be able to see the video. The Park Committee could also distribute the video to schools to gain the attention of the younger generations. These children would then have the potential to participate in the park's educational camps. Another possibility would be utilizing the pre-existing network among local park businessmen to have them show the video at their resorts. This would reach the visitors who stay in the park for more than a day, and enable them to both take advantage of the park's attractions highlighted in the video, and to practice the conservation techniques it conveys. By following these suggestions, the Park Committee will be able to send its message to a wider audience.

Our results also showed that the park could benefit from better signage along the nature trails, both for hikers and for visitors who do not know about other park attractions. One interviewee explained that some visitors are afraid of risking a trek along the trail because they don't know how long it is, where it leads, or what they

can expect to find along the way. The Park Committee may be able to explore options for signage along the trails within the park. Issues they could address are proper distance markers, important destinations and attractions, and safety warnings. Signs would inform visitors so they would be less hesitant to explore the park on their own. We recommend however, that signs not be too extravagant or abundant so that the natural setting can be maintained as much as possible. The park would have to determine appropriate designs and placement of the signs to achieve maximum efficiency and to uphold the park's ecotourism strategy.

As a result of our research, we also recommend that educational programs be established for the park staff. Members of the staff informed us that they would be more willing to be trail guides and answer questions at the visitors' center if they became more knowledgeable about the park and its environment. The staff is not comfortable talking to large groups of people and asked for training in becoming better public speakers. We recommend the creation of a staff training handbook, lessons, or seminars. Educational opportunities that could be included are a field guide explaining the local plant and animal life, a detailed description of each of the park's attractions and their locations, and lessons in public speaking. Implementing this could be as simple as having each staff member research their favorite aspect of the park and practice presenting it to groups of other staff members. The Park Committee could also determine the most efficient ways to distribute staff within the park, to ensure all jobs get done in a timely manner. The staff complained about a shortage of members but with greater occupational training, the shortage of manpower could be alleviated to some degree.

These recommendations provide an opportunity for Suan Phung Park to establish itself as a leader in environmental education and conservation. By implementing our ideas, Suan Phung can provide a successful ecotourism model for the rest of Thailand, blazing the path for other parks to follow. Each visitor that is educated by the park then has the opportunity to share and implement their knowledge of conservation, which will allow for decades of environmental improvement.

References

- Adeel, Z. (Ed.) (2003). East Asian Experience in Environmental Governance: Response in a Rapidly Changing Region. Retrieved November 5, 2004, from the World Wide Web:
<http://site.ebrary.com/lib/wpi/Top?id=10048799&layout=document>
- Agenda 21. (1992, June). Retrieved November 14, 2004, from the World Wide Web:
<http://www.un.org/esa/sustdev/documents/agenda21/index.htm>
- Analysis of Existing Conservation Tools. (2004) Retrieved November 7, 2004, from the World Wide Web:
<http://www.biodiversityscience.org/xp/CABS/research/economics/parks.xml>
- Bresnick, D., Giasson, P., & Phillips, T. (2004). Ecotourism in Suan Phung Nature Education Park: Balancing Conservation with Economic Development. Worcester: WPI.
- Brochure Design Tips. (2004). Retrieved November 28, 2004, from the World Wide Web: <http://www.mcgpaper.com/howtomakbroc.html>
- Bryant, H. C. & Atwood, W. W. (1932). Research and Education in the National Parks. Washington: United States Government Printing Office.
- Characteristics of the Royal Development Projects. (2003). Retrieved November 6, 2004, from the World Wide Web: <http://www.rdpb.go.th/main.asp?lang=EN>
- Chareonying, K. & Macek, P. (1993). Thailand Deforestation, Floods, and Logging Ban. The TED Case Studies. Retrieved November 14, 2004, from the World Wide Web: <http://www.american.edu/TED/THAILOG.HTM>
- Ching, C. S. (1998, August 30). How to Conserve the Environment?, 2 (12). Retrieved January 25, 2005, from the World Wide Web:

<http://www.wetlands.org/capacity/WW/past/wwvol-2/competition/iss12/contest.htm>

Chu, V. (1968). Thailand Today: A Visit to Modern Siam. New York: Thomas Y. Crowell Company.

Cultural Heritage and Land Management Plan for the Blackstone River Valley National Heritage Corridor. (1995). Approved by the Blackstone River Valley National Heritage Corridor Commission.

Darlington, S. M. (1998). The Ordination of a Tree: The Buddhist Ecology Movement in Thailand. *Ethnology*, 37 (1), pp1-15.

Earth Sangha: Buddhism in Service to the Earth. (2004). Retrieved January 25, 2005 from the World Wide Web:
<http://buddhism.about.com/gi/dynamic/offsite.htm?site=http%3A%2F%2Fwww.earthsangha.org%2Fbuddhism%2F>

Emel, J., Reynolds, D., & Williams, D.. (1992). “Knowing Our Place” Worcester: Headwaters of the Blackstone. Worcester.

Environmental Education. (1999). Retrieved December 7, 2004, from the World Wide Web: <http://www.sierraclub.org/education/ear1299.asp>

Evaluation of the ‘Going Over’ Video. (September 2002). A postal survey carried out by Exchange Campaigns. Retrieved January 18, 2005, from the World Wide Web:
<http://www.exchangesupplies.org/overdose/evaluation/videoevaluation.html>

Gardner, H. (1983). Frames of Mind. New York: Basic Books, Inc.

Garen, E. J. (2000). Appraising Ecotourism in Conserving Biodiversity. In Tim W. Clark., Andrew R. Willard., & Christina M. Cromley (Eds.), Foundations of

Natural Resources Policy and Management (pp. 221-251). New Haven and London: Yale University Press.

Haynes, J. (2004). Teach to Students' Learning Styles. Retrieved November 21, 2004, from the World Wide Web:
<http://www.everythingsl.net/inservices/learningstyle.php>

Hirsch, P. (1996). Seeing Forests for Trees. Chiang Mai, Thailand: Silkworm Books.

HRH Princess Maha Chakri Sirindhorn Visiting the Nature Park Project. (2004). Retrieved November 14, 2004, from the World Wide Web:
<http://www.rdpb.go.th/main.asp?lang=EN>

Johannesburg Summit 2002 – Thailand Country Profile. (2002). Retrieved November 14, 2004 from the World Wide Web:
<http://www.un.org/esa/agenda21/natlinfo/wssd/thailand.pdf>

John Muir Exhibit. (2004). Retrieved December 7, 2004, from the World Wide Web:
http://www.sierraclub.org/john_muir_exhibit/frameindex.html?http://www.sierraclub.org/john_muir_exhibit/john_muir_day_study_guide/

Johnson, L. K. (1992). The Buddhist Perception of Nature: Implications for Forest Conservation in Thailand. Trumpeter. Retrieved January 24\5, 2005 from the World Wide Web: <http://trumpeter.athabascau.ca/content/v9.1/johnson.html>

Kearsley, G. (2004). Explorations in Learning & Instruction: The Theory Into Practice Database. Retrieved November 24, 2004, from the World Wide Web:
<http://tip.psychology.org/index.html>

- Kenward, R. (2004, August). Incentive-based conservation. Retrieved November 5, 2004 from the World Wide Web:
<http://www.iucn.org/themes/ssc/susg/SustainableSept04/Incentives.htm>
- Kerbo, H. R., & Slagter, R. (2000). Modern Thailand. Boston and Bangkok: The McGraw-Hill Companies, Inc.
- Learning-Style Inventory. Retrieved November 21, 2004, from the World Wide Web:
http://pss.uvm.edu/pss162/learning_styles.html
- Learning Styles. (1998). Retrieved November 24, 2004, from the World Wide Web:
<http://www.chaminade.org/inspire/learnslt.htm>
- Lohmann, L. (1991). Biodiversity. London and New Jersey: Zed Books Ltd.
- Maxwell, J. A. (1996). Qualitative Research Design: An Interactive Approach. Thousand Oaks, CA: Sage Publications, Inc.
- National Park, Wildlife and Plant Conservation Department. Biodiversity Conservation in Thailand [Video]. Thailand.
- Nature Education. (2001). Retrieved December 7, 2004, from the World Wide Web:
<http://www.audubon.org/chapter/co/co/nature.htm>
- Nature of National Park. (2004). Retrieved January 31, 2005 from the World Wide Web: <http://www.dnp.go.th/parkreserve/nature.asp?lg=2>
- The Next Ten Years: An Amendment to the Cultural Heritage and Land Management Plan. (2003). Approved by the Blackstone River Valley National Heritage Corridor Commission.

Permpongsacharoen, W. (1993). Environmental Education: An Approach to Sustainable Development. Paris: Organization for Economic Co-operation and Development.

Quang, T. T. (July 1996). Buddhism and Environmental Protection. Retrieved January 24, 2005 from the World Wide Web:
<http://www.saigon.com/~anson/ebud/ebdha006.htm>

Report on National Heritage Corridors. (1992). Committee on Special Projects to the National Park System Advisory Board.

The Result of the Implementation. Retrieved February 17, 2005 from the World Wide Web: <http://www.moe.go.th/English/M1a/chapter5.htm>

Saving Wildlife and Wild Lands: Thailand. (2003-2004). Retrieved November 6, 2004 from the World Wide Web: <http://wcs-old.atlasworks.com/home/wild/Asia/thailand>

Thailand: Environmental Issues. (2003, October). Retrieved November 4, 2004, from the World Wide Web: www.eia.doe.gov/emeu/cabs/thaienv.html

Thailand Environment Monitor. (2004). Retrieved November 4, 2004, from the World Wide Web:
<http://www.worldbank.or.th/WBSITE/EXTERNAL/COUNTRIES/EASTASIPACIFICEXT/THAILANDEXTN/0,,contentMDK:20194499~menuPK:333323~pagePK:141137~piPK:217854~theSitePK:333296,00.html>

Thailand into the 80's. (1979). Bangkok: The Office of the Prime Minister, Kingdom of Thailand.

Thailand: Threats. (2004). Retrieved November 6, 2004, from the World Wide Web: http://wcs.org/sw-around_the_globe/Asia/thailand

Thailand: WCS Activities. (2004). Retrieved November 6, 2004, from the World Wide Web: http://wcs.org/sw-around_the_globe/Asia/thailand

Tiyavanich, K. (1997). *Forest Recollections : Wandering Monks in Twentieth-Century Thailand* . Hawaii: University of Hawaii Press. Retrieved November 5, 2004, from the World Wide Web: <http://site.ebrary.com/lib/wpi/Doc?id=5002128>

Appendices

Appendix I: Interviews

Interview #1

January 15, 2005

On our first visit to Suan Phung Park, we were given an introduction and overview of the park from Suthep, Sompop, and others. Suthep lives and works in Suan Phung. Sompop works in the Park Committee's office in Bangkok. This was more of a lecture than an interview, but we did ask a few questions at the end.

Translator: M. L. Siripastr Jayanta

1. There are three main tourist areas. Bhor-wee has waterfalls and a model farm. Boe Kleung has the hot spring and waterfalls. Huay Naam Sai has several resorts, a waterfall, and is located in the beautiful valley that has good air.
2. There are viewpoints on Kao-Kha Jone Mountain that overlook Myanmar.
3. Development goes against their ecotourism concept.
4. Some people believe that development has to be more roads and new buildings. It is hard to find a middle ground between public and the conservationists.
5. Is there transportation provided to visitors of the area?
There is a mini bus for rent that shuttles between spots at a minimal fee.
6. Do tourists go to the visitors' center?
Yes.
7. There is a network among resort owners, community leaders, and the Suan Phung Nature Education Park.
8. There is a problem between tourist's comfort and conservation meeting halfway. They suggest a master plan to be implemented for the government to set up tourist spots.

Interview #2

January 15, 2005

Owner of one of the more upscale resorts, member of the network mentioned in

Interview #1

Translator: Siripastr Jayanta

1. Attractions at this resort include a rose garden, waterfall, mountains, and prize-winning carp.
2. Other resort offerings are four wheeled vehicle tours to places like the “sea of fog.”
3. Most tourists come in the summer to see the orchids.
4. Do you encourage your customers to go to the visitors’ center?
Yes, most check out at 9am and then they stop by the center.
5. Regular clients include business workers from the city, hikers and fishing groups.
6. More common workers (ex. Farmers) go just to the waterfalls, not to resorts.
7. Does not allow staff to poach and that is why there are still many types of wildlife.
8. Tourists who come on buses are less responsible with trash disposal.
9. The park staff is trying to change the behavior of those visitors that are less environmentally responsible. Tourists want trash cans but residents and park staff want visitors to take their trash out of the park themselves.
10. The border area that the government is thinking of opening is a nice and dense forest. He does not want that area to be opened because that would mean destroying that forest in favor of development.
11. The committee on border openings consists of representatives of the military and commerce, but is still looking for conservationists.
12. The local management system is the largest problem (the same applies to the whole country as well).
13. Leadership within the local government needs to be improved because Suan Phung people do what the leader says.

14. All the problems in this area connect to the TAT (Tourism Authority of Thailand). There is no advertising and no investment in the area (roads, phones, electricity).
15. Visitors' center is on brochure created by the network.

Interview #3

January 15, 2005

May – visitor at the resort discussed in Interview #2

Translator: Siripastr Jayanta

1. Why did you choose to come to this park?

Good weather, ecotourism, and the forests.

2. Did you learn anything new about conservation during your visit?

Not really, but the people here treat the environment well.

3. Have you been to the visitors' center?

No, but I have been to the museum of the people in the local community.

4. Where are you from?

I live two hours from here and my friend is from Bangkok.

Interview #4

January 15, 2005

Som Pom – visitor at resort discussed in Interview #2

Translator: Siripastr Jayanta

1. Where are you from?

Bangkok

2. Why did you come here?

It is nice and cool. There is no pollution.

3. How many times have you been to this area?

Three times.

4. Have you been to the visitors' center?

No.

5. Why haven't you been to the visitors' center?

I don't have enough time because I just want to stay here and enjoy myself.

6. Can the visitors' center add anything to make you want to go there?

I might go there next time when I have more free time.

Interview #5

January 15, 2005

Mrs. Lalin Kapgagw – owner of a smaller resort, called Ba

Translator: Siripastr Jayanta

1. Why do people come here?

They come for the air, the service, the environment/nature. There are many resorts here but they come back to mine because of the service.

2. Do your customers respect the environment?

Most of the guests appreciate the natural setting and want her to make it better.

3. Do your guests go to the visitors' center?

Guests ask about other attractions and she recommends the park. Not all tourists go because they are scared to get lost (signs and roads need to be improved).

4. How long do visitors stay?

Two days; weekends/long weekends. On the weekdays they get a few tourists. Overall tourism in the area isn't good. Thinks it's because it is not very diverse, only those who want nature come here.

Interview #6

January 15, 2005

Village Leader near Ba Resort

Translator: Siripastr Jayanta

1. How long have you lived in the park?

He was one of the first to settle here, over thirty years ago. He used to be a miner. He doesn't want to move.

2. What do you see as the purpose of the nature park?

Tourism blended with the park. This area is not suitable for farming. Ecotourism and conservation.

3. What parts of the park do you like the best?

The hot spring, waterfalls, model farm, and water market on Thai/Myanmar border. He wants another water market. He wants to develop this land more for trade with Myanmar.

4. How do visitors treat the park?

They treat it very good. Some of them take their own trash out. In the beginning it was bad. The villagers need tourists. He hopes the tsunami will draw more tourists to this area.

5. What would he see as a middle ground between tourism and conservation?

He wants to build the forest and put more animals in it. Poaching is still a small problem that needs lots of improvement. Training and education for the locals will be useful. He encourages people to go to Myanmar to shoot. The villagers are aware now. The orange orchard uses lots of bamboo and this upsets villagers.

6. How did the villagers learn about conservation?

The government organized training for them.

Interview #7

January 16, 2005

Tanit – visitor at Khao Jone Waterfall. He and his family were having a picnic.

Translator: Assistant Professor Duanghathai Pentrakoon, Ph.D.

1. Where are you from?

Bangkok.

2. Why did you come to this park?

To picnic and because I have relatives here.

3. Have you been to the visitors' center?

(They didn't know about it)

4. Did you learn anything about the environment while on your visit?

They don't learn about the environment.

5. What do you like about the park?

It's quiet and there are not many people, so it hasn't been destroyed. I have been coming for three years and the place is still the same.

6. What would make this park better?

More trash cans and resting areas.

7. What do you do with your trash?

We carry it out.

Interview #8

January 16, 2005

Village woman that was collecting a fee for visitors to enter the waterfall area

Translator: Assistant Professor Duanghathai Pentrakoon, Ph.D.

1. How does the process for collecting money work?

Housewives in the village take turns collecting money for the waterfall. Only vehicles have to pay, not walking visitors. A motorbike is five baht, car is ten baht, pickup truck is twenty baht, and a tour bus is one hundred baht.

2. What do the tourists do with their trash?

Most tourist leave trash in the park and the money collected is used for the cleanup of that trash.

3. Do you tell the visitors not to leave their trash?

They let them know they can cook, but to please bring their trash back down. There are some signs about it, but not many.

4. Have you seen any changes in the park?

I have been here for thirty years and have seen lots of changes. In the beginning there were many tigers in the area, five mines, and the waterfalls were more beautiful. The tin mine put stuff in water. At the top level, big pipes used to carry water to the tin mines created lots of changes in the stream.

5. How is the village's relationship with the resort owners?

The resort owners used to own the tin mines. This is a big community and only a small part works with resorts. The community's main income comes from fruit.

Interview #9

January 16, 2005

Owner of a resort that is very close to the Visitors' Center. He used to own the tin mine.

Translator: Assistant Professor Duanghathai Pentrakoon, Ph.D.

He gave us a lot of information before we even asked questions:

-Brief history of the area

Mining started before he was born. The Dutch started the mining and after they left the Thai people took over. In 1989 there was a huge flood where one hundred people went missing. Two years later the tin price dropped from 150-200 to 60. After this, the mining stopped. The people began to grow mango trees and have chicken farms, but with no success.

-Creation of the resort industry

He changed the area into a resort. His family had to stay on the land or else someone would come and claim it for themselves. Around 1989, the resort business was good for the first two years. He arranged programs and promotions and word spread.

-Burmese immigration/fear of coming to area

The Burmese began to come into Suan Phung and news of crime in the area spread. People were afraid to come.

-Since 2002 the business has been booming again. The hot spring attracted people, and they felt safer going to the area since it had been established as a park. The weather is appealing to people and it is easier to come here rather than to the North.

1. How do visitors treat the park?

Resort visitors are very good; they appreciate the place and help preserve it.

Casual visitors – only some behave, most don't. They just enjoy themselves and don't worry about nature.

-Suggestions for improvement.

The park has many attractions, but all belong to the private sector. Each sector has its own regulations and they don't work together. A better idea would be for them to work together. Perhaps the park would be able to help. There is a need for a center to oversee all of that. The park still needs a system to get local people involved and to actually be part of the park. The park has an advantage in culture because of the Burmese. There are lots of groups with their own culture. They could organize weekend events.

2. How is the relationship with the local people?

It is very good but there exist different points of view, especially on tourism. Resorts want more visitors but the village leaders have narrower views.

3. Is the park's natural appearance being conserved?

It is getting better. There are more officers now that it is a park. People are afraid to grab whatever they want out of the park. The network has been around for two years. People come to relax and then they go home and tell their friends. Once it is the high season his resort wasn't big enough and then he called a friend to hold visitors and more resorts were created.

4. Do you tell people to go to the visitors' center?

Yes, he encourages people to go. He appreciates the park and says that if they develop more, they should have more information.

Interview #10

January 16, 2005

Three members of the park staff: Ponsan, Jatupon, and Papat

Translator: Assistant Professor Duanghathai Pentrakoon, Ph.D.

1. Do you live in the park?

Most of the staff are local but do not live in the park.

2. How long have you worked here?

For two years.

3. How many people work for the park?

There are twelve people that work for the park. They alternate days off, three workers everyday don't work. Only nine work everyday.

4. What work do you do?

Ponsan is Suthep's assistant. There are four zones that people work on. Three people work in the exhibits, look after visitors, and do cleaning.

Jatupon works two zones with three other people. He does gardening.

Papat is one of the six people that do all the other work.

5. What changes have you seen in the park?

Local people pay more attention to the environment. The locals preserve the forests. The quality of work is improving because of the establishment of the park. Since they are employed by the park they feel they have to set an example for the locals and they educate themselves. This area used to be all sand but the people did a lot of planting and grew everything.

6. How do visitors treat the park?

They feel they are very lucky to get good tourists that give support and look after the place. Most respect the park because this project belongs to HRH Princess Maha Chakri Sirindhorn.

7. Is the natural appearance being conserved?

Every year the environment camps help.

8. Is there a balance between tourism and conservation?

Yes.

9. What could make this area better?

Sport fields (football) for students to play on could help. Some groups come to relax and don't read the exhibits. All they do is take pictures and that's it. They would like to attract more tourists and have activities for them to do. They would like to lead people on herbal track and animal trail, but there aren't any animals. They do not want to cage animals because it isn't natural.

10. Are there nature guides?

They have guides but people do not know about them.

11. How do you go about getting a guide?

You would have to contact the office in the park in advance. Workers could be guides, but they want to have more knowledge about things like the trails first. They want training.

12. How many visitors do you receive each day?

On the weekdays we get twenty and on the weekend more than fifty. During a long vacation period we could get over a hundred.

13. How do locals treat the park?

They do their own work and hardly pay attention to the park. Locals do nothing.

14. How is the relationship between locals, resort owners and staff?

With the locals it's ok. The resorts think of the park as a competitor that steals customers. We do not consider ourselves competition because we tell visitors to check the resorts first for lodging. The people who come for the camps come straight to the park. The accommodations the park has are for the camps and researchers. Anyone else has to write a letter to the office asking for permission to stay at the park overnight. If you didn't go through that process and it is an emergency they would allow someone to sleep in a tent.

15. What do you like best about the park?

The best part about the park is that it gives them a job. Working for the environment is important.

16. What can be done to make the park better?

It would be nice to have more staff for the big groups that arrive and urgent projects. The job causes high stress a lot of times and conflict during work. They would like a permanent speaker to give groups more information. Fifteen employees would be better. Some of them do not like public speaking so they don't do it. Whenever they have conflicts they have meetings to solve the

problems. They rotate who gets time off so that nine people work at a time. They would like us to help protect the park. Media in English would be a big help. They are willing to learn anything – even English.

Interview #11

January 16, 2005

Mr. Torsa – member of the family that has sole access to Boe Kleung Hot Spring

Translator: Areerat Niyomsup

1. How long have you lived here?

I was part of the mining nearby. This place is good. Lots of people know about the hot spring.

2. What changes have you seen in the last ten years?

The dependence on tin mining. Many more people know about this area because it's close to Bangkok and other provinces.

3. How do people treat the area?

They have baths in the hot spring and enjoy relaxation. They do carry their trash outside. He disposes of his trash by burning it in another area.

4. How many people visit the hot spring?

On the weekdays only some come but many come on the weekends. Fifty to one hundred on the weekday and one thousand on the weekend.

5. Do your visitors use the museum?

Some do but most aren't interested in learning about the environment because they just want to relax. People are scared to go in the park because it looks like a government office.

6. How is your relationship with the park staff?

We don't really talk to them; there is a lack of communication. The park is created for academic purposes. Tourists want to be entertained so they don't go to the visitors' center to use the educational resources.

7. What can make this place better?

He appreciates the environment. Doesn't want any more development and wants to maintain the environment. People don't go in the forest because they're afraid of many things.

Appendix II: Storyboard and Script

Storyboard

Something Shocking

- Deforestation
- Specific Examples
- Importance

Park Geography, Culture, History

- 4 watersheds
- Mining History
- Ethnicities living in SP
 - Dutch
 - Thai
 - Burmese

Princess

- First visited in 1995
- Noticed great diversity of trees
- Set up the park to:
 - Protect the local environment
 - Do research on the ecosystem
 - Educate about conservation
 - Educate the local people about using the environment safely

Services of the Park

- Visitors' Center
 - Museum
 - Library
 - Maps
 - Store
 - Gardens
 - Outdoor exhibits
- Educational Program
 - Camps
 - Guides
 - Trails (transition)

Park Attractions

- Nature Trails
- Waterfalls
 - Proximity to visitors' center
 - Levels
 - Enjoy picnicking
 - Carry out trash
- Hot Springs
 - Proximity to visitors' center
 - Minerals/mineral water

Cause/geothermic

Recreation

Resorts

Hot spring

Located throughout the park

Family vacations

Importance of Conservation

Nature is delicate

Environment provides benefits

Examples

Future generations

Ways of Conserving/Enjoying

Conserving

Carry in/ carry out

Stay on the trails

Enjoying

Photography

Bird watching

Relaxation

Meditation

Hiking

Conclusion

Park Contact Information

Script

What happens when one tree is cut in the forest?

One tree can be used by local families as firewood. But when forests are left bare: animals lose their habitat, the natural essence of the land is forever changed, and future generations lose resources that would provide a healthy way of life.

As more people become aware of the consequences of such things as destructive logging or as small as picking plants from the forest, the environment can begin to heal itself.

Show title screen.

Suan Phung Nature Education Park is 230 km west of Bangkok, on the border of Thailand and Myanmar, in the Ratchaburi province. Suan Phung is one of the areas in Thailand that has attracted attention because of its abundance of natural beauty and benefits.

Suan Phung Park is composed of four watersheds. One area is the Huynamsai watershed which contains the Krajom Mountain. Huyphak watershed is most known for the Boe Klueng Hotspring and the Kaojone waterfall. Next is the Huykokmoo watershed with the Bhorwee Waterfall and the Queen's Farming Model. The last watershed of Suan Phung is the Tako Phidthong watershed and its main attraction is a mining village; a small reminder of the park's past.

The Suan Phung community is made up of several cultures including Thai, Burmese, and Karen hill-tribe. These people were attracted to the area because of the growing popularity of tin mining. As time passed, Thai people gained control of the mining industry. Unfortunately, tin mining requires lots of water at high pressures to separate the ore from the dirt and gravel. The runoff from this process began polluting the park's water sources. The mining process also ruins the rich topsoil, leaving behind nothing but sand. Due to the economic setbacks, the tin mining industry came to an end; however, this was just the beginning for the Suan Phung area.

In 1995, on a visit to western Thailand, HRH Princess Maha Chakri Sirindhorn noticed the great diversity of trees in the Suan Phung area. She immediately began the process of establishing the new nature park to protect the area's beauty. Since it was founded the park's main objectives have been: to protect the local environment, to do research of the entire area's ecosystem, to educate about the importance of conservation, and how the local people can benefit from the environment without abusing it.

To reach these goals the park has made incredible strides. When entering the park, you can see the visitors' center, which has a walk-through museum and a library. Both of these are great ways to learn about plant and animal species native to the area. In addition, the center has gardens, an outdoor mining exhibit, and a small store selling refreshments and park souvenirs.

Suan Phung also offers educational camps for students of many ages. Camps cover topics like forests, geology, and wildlife. The camps link environmental concerns

with the living styles of local people. Parts of the lesson plan include bird watching and how to test for water quality. Although these camps are only available for students, the park does offer guided tours of the trails for any visitor who requests them ahead of time.

Along the trail you will find many attractions, such as different types of trees, wildlife, waterfalls and hot springs. The nearest waterfall is located 1.4km from the visitors' center and the furthest level of that waterfall is only 2.2km away. The falls, containing six levels, are spanned by a bridge at the sixth level; providing breathtaking views of the stream and the park. Many visitors enjoy picnicking along the side of the stream on a warm weekend afternoon. The park encourages these and all visitors, to please carry out all their trash with them.

The Boe Klueng hot springs are very close to the visitors' center, a short walk down the trail. The springs are a result of geothermic activity beneath the Earth's surface. The springs also contain minerals that provide minor health benefits to those who relax in the water.

The hot springs are located in the middle of a resort, where there are natural springs and a modern bathhouse, with water pumped in from the springs. Resorts are located throughout the park, for visitors to stay near whichever part of the park they enjoy the most. Park visitors frequent these resorts for relaxation and to escape the pressures of life in the cities.

It doesn't matter if you come from a big city or a small village; Suan Phung has something to offer you. Its beautiful natural setting and unique collection of trees is hard to find anywhere else. By taking care of Suan Phung Park when you visit, you are helping to save the park for all of your future visits.

Suan Phung is a great place for relaxation because of its fresh air and beautiful natural setting. Because nature is so delicate, we need to protect every part of it. Nature also provides things that we need for our everyday lives, like food and medicine. By treating every living thing in the park with respect, we can keep these things around so even our children's children can enjoy them.

Protecting the environment isn't as difficult as it sounds. Simple things, like taking your trash out of the park when you leave, save the environment too. You can take pictures of the plants instead of picking them, and stay on the trails marked by the park. There are many things you can do in a healthy environment that you can't do anywhere else. You can go bird watching, identify animal tracks on the ground, or meditate in the gentle sounds of nature.

Whether you enjoy hiking, learning about nature, or just relaxing, Suan Phung is the perfect place for a relaxing vacation. The air, geography, water, and life at the park are what make it special, and as long as you treat it with respect, the park will be around for a long time to come. For more information on how you can help protect the environment, check out the visitors' center at Suan Phung Nature Education Park.

Appendix III: Focus Group for Video Review

แบบสอบถามความเห็นของผู้ชมวีดิทัศน์เรื่องอุทยานธรรมชาติวิทยา
อันเนื่องมาจากพระราชดำริสมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี
อ.สวนผึ้ง จ.ราชบุรี

คณะนิสิตจากมหาวิทยาลัยยูสเตอร์โพลีเทคนิค รัฐแมสซาชูเซต สหรัฐอเมริกา
ขอขอบพระคุณที่ท่านกรุณาสละเวลามาชมนวีดิทัศน์นี้
ในการนี้ใคร่ขอให้ท่านตอบแบบสอบถามความประทับใจของท่านหลังได้ชมวีดิทัศน์แล้ว
และโปรดให้คำแนะนำเพื่อคณะจัดทำจะได้นำไปปรับปรุงวีดิทัศน์ให้เหมาะสมมากขึ้น

**

ชื่อ-สกุล (Name): _____

อาชีพ (Occupation): _____ อายุ (Age) : _____

- 1.) ท่านคิดว่านักท่องเที่ยวที่มาเยือนอุทยานธรรมชาติวิทยา จะชอบวีดิทัศน์นี้หรือไม่?
(Do you think park visitors will be interested in this video?)
- 2.) ท่านชอบเนื้อหาตอนใดของวีดิทัศน์นี้มากที่สุด? (What was your favorite part of the video?)
- 3.) มีเนื้อหาตอนไหนบ้างหรือไม่ที่ท่านไม่ชอบ? กรุณาชี้แจง (What was your least favorite part? Please explain.)
- 4.) ท่านคิดว่าวีดิทัศน์นี้แสดงภาพพจน์โดยรวมของอุทยานธรรมชาติฯสวนผึ้งได้ถูกต้องหรือไม่? (Do you think the video was a good description of the park?)
- 5.) ท่านฟังเสียงพากย์ได้ชัดเจนดีหรือไม่? (Did you have difficulty understanding the narrator?)

- 6.) บทพากย์และรูปภาพสอดคล้องกันดีหรือไม่? (How well did the images go with the narration?)
- 7.) ท่านพอใจในการลำดับภาพของวีดิทัศน์นี้หรือไม่? (Were the transitions between pictures distracting?)
- 8.) ท่านรู้สึกประทับใจกับวิธีการนำเสนอในช่วงต้นของวีดิทัศน์ไหม? อะไรคือสิ่งที่ท่านประทับใจ? ถ้าท่านคิดว่ายังไม่ดี เราควรปรับปรุงอย่างไร? (Did the start of the video catch your attention? Why? What would capture your attention better?)
- 9.) ท่านชอบตอนจบของวีดิทัศน์นี้หรือไม่? (What would be a better way to end the video?)
- 10.) การดำเนินเรื่องของวีดิทัศน์นี้ดีหรือยัง ท่านเข้าใจและติดตามได้โดยตลอดหรือไม่? (Was the sequence of the video understandable?)
- 11.) การดำเนินเรื่องสับสนบ้างหรือไม่? กรุณาชี้แจง (What parts of the video were confusing? Please explain.)
- 12.) ท่านคิดว่าความยาวของวีดิทัศน์นี้เหมาะสมหรือไม่? (Should the video be longer or shorter?)

- 13.) ท่านอยากให้เพิ่มเติมรูปภาพอะไรอีกบ้างในวิดีโอ? (What images would you like to see more of?)
- 14.) แผนที่ที่แสดงในวิดีโอนี้มีความถูกต้องเพียงใด? ท่านสามารถมองภาพออกหรือไม่? (Were the maps correct and understandable?)
- 15.) หลังจากชมวิดีโอแล้ว ท่านรู้สึกอยากไปชมแหล่งท่องเที่ยวใดเป็นพิเศษหรือไม่? (After viewing the video, is there any particular attraction that you want to visit?)
- 16.) ท่านได้รับความรู้ใหม่หลังจากชมวิดีโอนี้บ้างหรือไม่? โปรดยกตัวอย่าง (Is there something new you learned from the video? Please give an example.)
- 17.) หลังจากชมวิดีโอแล้วท่านมีความรู้สึกอยากให้ความร่วมมือในการอนุรักษ์อุทยานธรรมชาติฯ มากขึ้นหรือไม่? (After viewing the video, do you have stronger feelings about protecting the park?)
- 18.) ในความเห็นของท่าน ท่านคิดว่าท่านจะได้ประโยชน์จากการอนุรักษ์อุทยานธรรมชาติฯ หรือไม่? (In your opinion, what are the benefits of protecting the park?)
- 19.) ท่านคิดว่าท่านสามารถช่วยได้อย่างไร? (What actions could you take to help conserve the park?)
- 20.) โปรดแนะนำสถานที่ที่ทางอุทยานธรรมชาติวิทยาควรมานำวิดีโอเรื่องนี้ไปฉาย/เผยแพร่ (Where would be good places to show this video?)

21.) ถ้าท่านอยากจะขอร้องให้คณะผู้จัดทำปรับปรุงวีดิทัศน์นี้ให้ดีขึ้น
ท่านจะขอให้ปรับปรุงอะไร? โปรดอธิบายอย่างชัดเจน (If you were to change one
thing about the video, what would it be?)

22.) โปรดให้คำแนะนำว่าศาลาธรรมชาติวิทยาควรมีนิทรรศการหรือกิจกรรมใดๆเพิ่มเติมเพื่อช่วย
เพิ่มพูนความรู้ที่เป็นประโยชน์แก่ท่านและชุมชน?
ท่านต้องการรูปแบบนิทรรศการ/สื่อแบบใด? (Please tell us if there is any specific
exhibit/activity that would be useful to you, or to the community, that could be
displayed at the exhibition center. What types of media do you prefer?)

ความเห็น/ข้อเสนอแนะอื่น ๆ (Other Comments):

Appendix IV: Detailed Recommendations

Recommendations for Displays and Activities

Activities for camps

- Make a collage comparing cities to wilderness.
- Have the campers share how their home is different from the wild.
- Choose a sense, and imagine what it would be like to be without it. How would wild animals deal without it? What does that sense teach you about your surroundings? For example, hearing. Be quiet for five minutes and just listen. What do you hear and what does it teach you about your surroundings?
- ** “Feely Bag”
- ** Sense of Smell
- ** Nature scavenger hunt (record only, don’t collect objects) or bingo
- Identify parts of the environment that have and haven’t changed in a long time (example: rivers and mountains vs. plants and buildings)
- Act out an animal’s day from morning to night. What are its needs, and how are those needs fulfilled? How are these similar to human needs?
- Write a ‘recipe’ for a good wild place to visit (clean air + fresh water, etc).
- Write stories about stopping pollution.
- Write a set of ideal environmental ethics.
- Make puppet shows about the environment, pollution, etc.
- One camper holds a nature object and describes it while another camper (who can’t see it) tries to guess what it is.
- Lead a blindfolded camper to six trees, two of which are the same species. Have the camper try to guess which two were the same.
- List your needs and how they are fulfilled by nature. Repeat this while pretending to be a part of nature (tree, animal, waterfall, etc).
- Make a list of needs and a list of resources. Connect each need to the resources that fulfill it. What happens if one resource disappears?
- Invent and draw an animal based on a specific habitat. What helps it survive there? Switch the habitat. How well would the animal survive?
- ** As a group, draw a mural of a community/habitat. Cut out pictures from magazines or draw plants and animals, and attach them to the mural. Use yarn to connect the plants and animals to their needs in the habitat. Connect plants and animals to who eats who. This shows the web of life.
- Pass around animal skulls and discuss adaptations that help the animal survive (teeth types, eye location, etc.).
- ** Demonstrate air pollution by burning a candle under a glass, and showing the collection of soot on the glass, or put a sock over a car exhaust and run for a (very) short time, then look at the sock. Put students in a closed circle to represent the park, then clap erasers and fan the dust into the circle to show how air pollution spreads. Discuss ways to reduce air pollution (walk or take a bus instead of driving, etc).
- Teach the campers how to use field guides.

Activities for visitors’ center

- ** Feely bag

- ** Sense of Smell
- ** Nature scavenger hunt (record only, don't collect objects)
- ** Drawing Center

Posters/displays

- Thai environmental history, relating to expansion and development
- Wild versus domestic animals
- Adaptations
- Food chain display, including photosynthesis
- Water cycle
- Breakdown of water supply on earth (oceans, glaciers, groundwater, streams, etc)
- Timeline of earth formation, evolution, humans, ice ages, etc. Space can be set up for students to draw and put pictures near relevant times (dinosaurs, etc).

Brochures

- English language brochures
- Nature trail guide and map
- Overview of the park's waterfalls
- Plant and animal life found at the park
- Conservation techniques

** More information available in attachments

“Feely Bag”

- 1) Fill an opaque bag with objects from nature. Make sure that none of these objects are sharp or would damage any of the other objects.
- 2) Have students talk about how it is possible to visualize objects just by feeling them.
- 3) One-by-one, have students reach into the bag, choose and feel an object, and guess what it is.
- 4) Reveal the object, and then discuss what the student observed and the conclusions that came from the observations.
- 5) Discuss the object, and its role in nature. Be sure to mention that students should not go collecting these items from nature, and that the items in the bag were collected in a non-harmful way.

Optional expansion: Include litter items, and discuss what happens if those end up in nature.

Ideas for nature objects to include:

Rocks
Animal bones or skulls
A branch with leaves
Snakeskin
Feather

Ideas for litter items to include:

Plastic or glass bottles
Bottle caps
Empty chip bags

Sense of Smell

- 1) Gather items from nature that have strong scents.
- 2) Blindfold campers and have them smell each item one at a time, then guess what the item is.
- 3) Discuss how mammals smell, and how some animals have stronger senses of smell than others.
- 4) Make two samples of each scent. Pass the samples out to the campers, each camper gets one sample. Have each camper find the person who has the matching scent.
- 5) Discuss the importance of the sense of smell to animals in nature, giving examples of animals that use it for survival.

Suggestions for scents:

Pine needles
Dirt
Citrus peels
Flowers
Soaps or perfumes with those scents

Nature Scavenger Hunt

- 1) Have students pair up or form small groups (with a chaperone if necessary).
- 2) Give each group a list of things to find in the park.
- 3) Inform them that they are only to record or make pictures of the items they find, and not remove them from their natural setting.
- 4) Give students a time limit (half hour to two hours, age dependent) to find items from the list, with a set meeting time and place.
- 5) Share what has been found, what setting it was found in, and what its role in nature is. Also discuss items that were not found, and why the campers couldn't find them.

Ideas for the list:

Feather

Plants and animals, pick particular species

Specific types of rocks

Snakeskin

Animal bones

Animal tracks

Stream

Bird's nest

(The following are not specific objects, but encourage creativity and thought)

Bird calls

Something with a rough texture

Something with a smooth texture

Something that is brightly colored

Something that the campers or their families use in everyday life

Community Mural

- 1) As a group, draw a mural of the community that you live, work, and play in.
- 2) Each child should either draw or cut out of a magazine a picture of a plant or animal.
- 3) Have each student place their plant or animal in the community (tape or thumbtack).
- 4) Use yarn to connect each plant or animal to the community and to each other according to needs. Plants can be connected to the sun, animals connected to the plants, or buildings in the mural can be connected to the trees that they came from.
- 5) Discuss the resulting web of yarn as the web of life, and talk about the interconnectedness of all living things.

Air Pollution Awareness Activities

A) Candle Activity

- 1) Hold a burning candle under a sturdy glass (Pyrex works well).
- 2) After a minute, remove the flame and display the spot of soot on the glass.
- 3) Discuss the effects of burning things on the air.

B) Car Exhaust

- 1) Put a clean sock over the exhaust of a car.
- 2) Run the car for a very short time (so as not to cause accidents).
- 3) Display the now-dirty sock.
- 4) Discuss options for reducing air pollution from vehicles, such as taking a bus or riding a bike.

C) Spread of Air Pollution

- 1) Have one group of students form a circle representing a natural area.
- 2) Have two students clap erasers to form the air pollution caused by cities.
- 3) Have two other students use fans representing the wind to blow the chalk into the circle.
- 4) Have the students discuss how air pollution spreads, even to locations far from the source. Also discuss ways of reducing the pollution.

Drawing Center

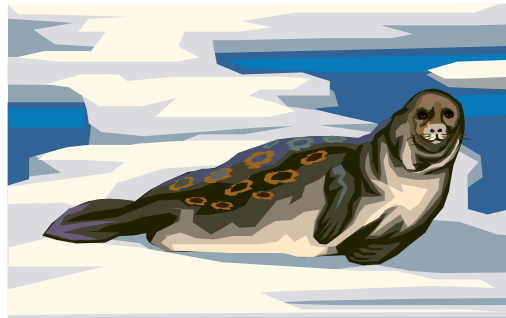
Set up a drawing and activity center. Include supplies such as crayons, recycled paper, old magazines (both nature and popular), scissors, glue, yarn, cotton balls, macaroni, fallen leaves, etc. Provide activity cards for visitors (mostly children) to choose from. The following are some examples of activity cards.

Adaptations

- 1) Pick and draw an environment.
- 2) Invent and draw an animal to live in that habitat.
- 3) Add adaptations to the animal. What kind of adaptations are these? Does it have sharp teeth like a predator, or a certain color to hide from other animals?
- 4) Draw another habitat.
- 5) Cut out your animal and place it in the new habitat. How well will your animal survive there? Was it better suited to a different temperature or food source in its old habitat?
- 6) What adaptations would it need to survive in this new environment? Draw in these adaptations.



The stripes on tigers help them blend in with the shadows in their jungle surroundings to better stalk prey.



Seals, whales, and many other marine animals have thick layers of fat to help keep them warm in the cold ocean.

Living Places

A collage is a collection of pictures about similar things. Collages can be made out of many different things, like drawings, pictures from magazines, or anything else you think of. Try making your own collages, as it says below.



Animals like to live in natural areas. They need the fresh air, clean water, and large areas to roam around in.



Wild animals don't live well in cities. They can't find enough space or the right type of food in cities.

- 1) Draw or cut out pictures from magazines relating to both nature and city life.
- 2) Paste your pictures onto two collages, one of the city and one of nature.
- 3) Compare the two places. What do they have in common? What makes them different?
- 4) Draw a picture of yourself. Cut it out, and add it to the collage you would rather live in. Why did you decide that? Which would you rather visit? What benefits does one have over the other? Why do you think the two places should be kept separate?

Pollution Stoppers

- 1) Think of ideas about how everyday people can stop pollution. What kinds of pollution are there, and how can each one be prevented?
- 2) Write a story or make a comic strip about stopping pollution.
- 3) Use your imagination. If you were a superhero, how would you stop pollution then? How can you use some of those same ideas to stop pollution without your superpowers?
- 4) Share your story with your friends and family.
- 5) In the park and at home, use your ideas to help stop pollution!



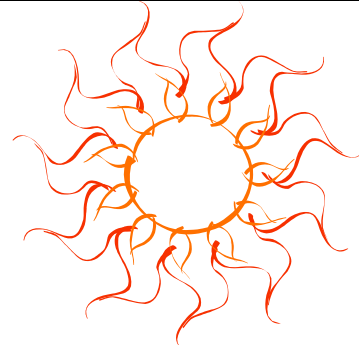
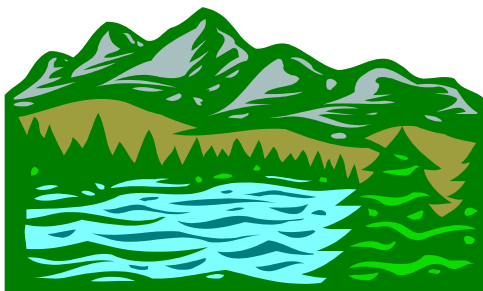
Recipe for Nature

Recipes are the ingredients and step by step instructions usually used to make your favorite foods, like Tom Yum Kung or Pad Thai. In this activity, use your imagination to create a 'recipe' for what you think would be a great natural place.

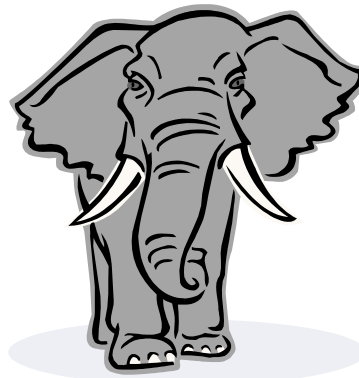
1) Make a list of ingredients. What should a good natural environment have? Think about things like fresh air and clean water. Draw each of these ingredients.

2) What are the steps you should take to help make this an even better environment? Good steps for a recipe are things like picking up any trash in the area. Make pictures of people doing these steps.

3) What will your environment be like when you've finished making it? Draw a picture of what it will look like.



Sunshine is important for plants to grow. However, rain is important too because it provides water for the land and the animals.

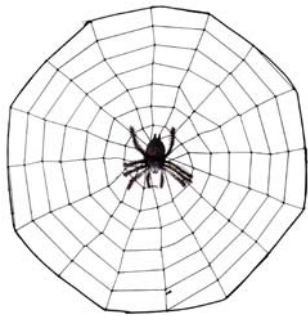


Animals help make wild places unique. They are an important part of the web of nature, and should be protected.

Web of Life



Fruit that you eat comes from trees, but the trees need water, soil, and sunlight to grow. You also need a truck to bring the fruit to you, and the metal to make the truck and the gas to run it come from the earth.



When one strand of a spider web is shaken, it jiggles all the other strands because everything is connected. The web of life is very similar. If you affect one thing, everything else changes too.

1) On one side of your paper, write a list of your daily needs. This can include things like water and shelter.

2) On the other side of your paper, write a list of things that help meet your needs. Cotton for shirts comes from the cotton plant, and the metal for needles to sew a shirt comes from a mine.

3) Use pieces of yarn (or draw the lines) to connect each of your needs to all of the things that meet them. When everything is connected, you should have a 'web,' that connects all of life.

4) Cover up one of the things that meets your needs. What happens to your needs when that one thing disappears? What happens to the other resources?